A seating- and sleeping-furniture piece, which comprises a framework and a cushion swingably mounted on the framework. The cushion is adapted to form in a seating furniture a backrest in its backward upwardly swung position, and to form in a sleeping furniture a wedge cushion in its downwardly swung position. Two cushions are disposed on a carriage capable of rolling-in and rolling-out from the framework. The cushions are disposed on top of each other in the seating furniture and during their rolling out and under-grip in the seating position the cushion swung upwardly as a backrest and rolling out so far in the one bed position under the cushion swung upwardly as a backrest, that the forward bottom edge of the backrest and the rear edge of the seating- and the laying-cushion are disposed vertically on top of each other, and in the double bed position, the two seating- and laying-cushions are disposed one behind the other, and capable of being laid down in the double bed position following the cushion swung forward downwardly as a wedge cushion with the formation of a double laying face. The carriage comprises two telescope-like parts displaceable relative to each other. The inside disposed of the parts define a bed chamber, which has an engagement face for the upper of the seating cushions in its use as laying cushion, as well as have an engagement face for the wedge cushion, and is supported on the floor. The outside disposed part is supported on the floor on the front and at the rear by means of rollers on the inside disposed part, and forms an engagement face for the lower seating- and laying-cushion. A cover receives a wire insert to form an upper closure for the bed chamber, and is swingably mounted in a frame. The frame is swingably mounted on the inner part of the carriage, and is equipped with slide pins. The framework includes obliquely rearwardly disposed grooves which secure the slide pins. Roller means are formed on the outer part of the carriage, and side parts of the frame are formed as sliding faces for the roller.

12 Claims, 8 Drawing Figures
SEATING-AND SLEEPING FURNITURE

The present invention relates to a seating- and sleeping furniture piece useable as a single or double bed. A seating- and sleeping-furniture piece has been known in the Austrian Pat. No. 230,570, in which a cushion is swingingly mounted on a frame, which cushion forms in the seating-furniture piece a back rest in its swung-up position and in the sleeping-furniture piece a wedge cushion in its downwardly swung position and in which two cushions are provided on a carriage capable of rolling inwardly and outwardly, respectively, relative to the framework. The two cushions are superposed in the seating-furniture piece and during rolling out of the carriage and undergrip the cushion swung upwardly as a backrest and in the single bed position are rolled out so far below the cushion swung upwardly as a backrest, that the forward edge of the backrest and the rear edge of the seating- and lying-cushions, respectively, are vertically on top of each other, and in the double-bed position the two seating- and lying-cushions, respectively, are arranged one behind the other and capable of being laid, following the cushion swung downwardly as a wedge cushion, with the formation of a double laying face. The carriage consists thereby of two parts telescopically displaceable relative to each other, the inwardly disposed part forming a bedding chamber, having a supporting face for the upper seating cushion and being supported itself on the floor, while the outwardly disposed part is supported at the front on the floor and at its rear by means of rollers on the inwardly disposed floor, and forms a supporting face for the lower seating- and lying-cushion.

It is one object of the present invention to provide a seating- and sleeping-furniture piece, which is designed such, that in the seating-position the superposed seating and lying-cushions have an oblique inclination in rearward direction, in order to render the seat more comfortable. This oblique inclination is to be removed again, however, during the transformation of the seating-furniture piece into a sleeping-furniture piece and is formed as a plane and horizontal laying face. It is further aimed at thereby, that also the cushion finding use as a wedge cushion can be brought into any oblique- or inclined-position, yet also into a horizontal position. The support of the cushion is to be performed such, that no impressions result on its upholstery.

Finally, the present invention aims at a construction, in which the cushion forming in the seating position a backrest and in the sleeping position a wedge cushion is to maintain at first its position during the transformation from the seating position into the sleeping position that means is not to tip downwardly, before swinging it down manually. On the other hand, the upward swinging of the cushion from its position as a wedge cushion into its position as a backrest is to be simplified.

It is also an essential object of the present invention to provide a seating- and sleeping-furniture piece, wherein a cover, receiving a wire insert and serving as an upper closure for the bedding chamber, is swingably mounted in a frame, which is swingably mounted on the inner part of the carriage and is equipped with slide pins, which enter into grooves and rails, respectively, disposed in the frame obliquely rearwardly inclined, whereby the side parts of the frame are formed as sliding faces for the rollers or slides provided on the outer part of the carriage.

It is still another object of the present invention to provide a seating- and sleeping-furniture piece, wherein rests or abutments, respectively, are provided in the grooves or rails, respectively, for securing the carriage in the position of use, namely as single bed, but also as a seating furniture piece and as a double bed.

It is a further object of the present invention to provide a seating- and sleeping-furniture piece, wherein springs, by example of draw springs between the part of the carriage, preferably the slide pin secured to the frame and the framework, for support of the outward rolling of the carriage.

It is yet another object of the present invention, to provide a seating- and sleeping-furniture piece, wherein rests or abutments, respectively, are provided in the sliding faces of the side parts of the frame, for securing both parts of the carriage relative to each other.

In accordance with a preferred embodiment of the present invention walls of flexible material, by example textile material or synthetic material, is provided as a rear and lateral closure of the bedding chamber.

It is still a further object of the present invention, to provide a seating- and sleeping-furniture piece, which includes a swivel-bearing connected with the framework for adjustment of height provided for the swingable mounting of the backrest or wedge cushion, respectively. The swivel-bearing has, in accordance with the present invention, a bearing pin flattened at least on one side, which is yieldingly supported, by example on a blade spring. The blade spring can be secured thereby in slots of bearing blocks, which are connected with the framework for adjustment of their height or it may have seats for its securing by screws to bearing blocks connected with the framework for adjustment of their heights.

It is brought about at first by the blade spring, which cooperates with the flattened part of the bearing pin, that the backrest tips downwardly, as soon as the seating- or laying-cushion cannot support it any more, rather can be swung downwardly only by manual operation. Furthermore, it is brought about by the yielding support of the bearing pin by a blade spring, that the backrest sinks slightly downwardly, as soon as the seating- or laying-cushions are pulled out under it and thereby prevents a rearward sliding of the carriage. By this arrangement the position of the furniture piece as a single bed is fixed in one direction. Finally, the blade spring supports the upward swinging of the wedge cushion into its position as a backrest.

The connection of the swivel bearing for the backrest or wedge cushion, respectively, which connection is adjustable as to its height, provides also the possibility for variation of the inclined position of the wedge cushion, in particular to achieve, that the wedge cushion assumes a horizontal position in the bed position.

For the securing of the use positions of the cushion as a backrest or as a wedge cushion, respectively, in accordance with the present invention, an abutment is provided laterally on the backrest or the wedge cushion and preferably adjustable counter abutments are provided on the inside of the framework.

In another embodiment of the present invention, joint bars are provided laterally on the backrest- or wedge cushion, respectively, for the swingable mount-
ing of the latter, which joint bars are pivotally on the inside of the framework and have outwardly directed projections, by example throws, which enter bow-shaped recesses on the inside of the framework, the ends of which are formed as abutments for the projections for securing the use positions of the cushion as a backrest or as a wedge cushion, respectively. Adjustable abutments can be provided thereby at the ends of the bow-shaped recesses.

With these and other objects in view, which will become apparent in the following detailed description, the present invention, which is shown by example only, will be clearly understood in connection with the accompanying drawings, in which:

FIG. 1 is a perspective front view of the furniture piece designed in accordance with the present invention, in its use as a seating furniture piece;
FIG. 2 is a side elevation of the furniture piece shown in FIG. 1;
FIG. 3 is a side elevation of the furniture piece in its use position as a bed for one person;
FIG. 4 is a side elevation of the furniture piece in the use position for a double bed;
FIG. 5 is a fragmentary elevation of the mounting of the backrest or wedge cushion, respectively;
FIG. 6 is a fragmentary elevation of another embodiment of the mounting of the backrest or wedge cushion;
FIG. 7 is a side elevation of still another embodiment of the mounting of the backrest or wedge cushion; and
FIG. 8 is a rear elevation of the mounting shown in FIG. 7.

Referring now to the drawings, and in particular to FIGS. 1 to 8, the seating- and sleeping furniture piece comprises a frame work 1, which has main members, which are secured to a base frame 1'. A cushion 2 is swingably mounted on the main members of the framework 1 by means of a bearing pin 3. The cushion 2 serves in the seating furniture piece as a backrest and is covered at its front side and its top side with a furniture covering material, while its backside is covered with any suitable material. The cushion 2 is upholstered on both sides. The seating face is formed of two cushions 4 and 5, whereby the cushion 5 is arranged on an outer part 6 of a carriage capable of rolling-out from or rolling-into the framework 1. The cushion 4 lies on the cushion 5 in the use as a seating furniture piece and is covered with any suitable furniture covering material on the outer sides which are visible in its use as a seating furniture piece. In the seating position of the furniture piece the cushion 2 is entirely or partially (FIG. 2) undergripped by the cushions 4 and 5 so that a seating face results, which permits a comfortable seating. If a deeper seating face is desired, it will suffice to pull out the carriage for a certain length. The framework can be supported by feet or by a socket or the like on the floor. The cushions 2 and 4 can be divided in three parts each on their front and upper sides, and they are covered on their back side and their bottom side throughout with any suitable material.

For the formation of a laying face for one person, the carriage is rolled out so far, that, as shown in FIG. 3, the rear edges of the cushions 4 and 5 are led vertically below the forward bottom edge of the cushion 2. The bearing pin 3 of the cushion 2 is, as shown in FIGS. 5 and 6, flattened at least on one side and it supports itself on a blade spring 20. By this type of support, it is brought about at first, that the backrest remains in the position shown in FIGS. 1 to 3, even if the seating and laying cushions 4 and 5 are pulled out thereunder. Furthermore, in the position of the furniture piece, shown in FIG. 3, it is brought about, that the cushion 2 sinks slightly downwardly with a bending through of the blade spring 2, when its bottom forward edge loses its support by the upper cushion 4. Thus the backrest 2 forms an abutment for the seating and laying cushion 4 and prevents a backrolling of the carriage.

The carriage comprises an outer part 6 and an inner part 7. The inner part 7 runs on rollers on the floor, while the outer part 6 is supported by rollers 9 or slides on the inner part and is supported by rollers 10, which are disposed behind a socket, on the floor.

For the rollers 9 abutments 27 are provided in the inner part 7, which limit the rolling out into the position shown in FIG. 4 and the sliding in into the positions shown in FIGS. 2 and 3. For simplification of the handling grips 35 covering the part 6 of the carriage can be provided.

The inner part of the carriage receives a bedding chamber 11, which is covered by a cover 12 receiving a wire insert. This cover 12 is swingably mounted about hinges 18 in a frame 14 and equipped with grips 36, in order to make possible an opening of the bedding chamber 11.

The frame 14 is swingably mounted about a swinging axis 17 in the part 7 of the carriage, and it is equipped with sliding pins 15, which enter grooves or rails 16, respectively, which are provided on the inside of the framework 1. For simplification of the rolling out of the carriage, springs engaging the sliding pin, and in particular draw springs 28 or pressure springs can be provided. The grooves or rails 16, respectively, are inclined rearwardly and downwardly, so that the frame 14 assumes in the seating position of the furniture piece a rearwardly inclined position and thereby also the outer part 6 of the carriage, on which the seating or laying cushions 4 and 5 are resting, assume a similar inclined position, so that the rearwardly inclined seating face results. The arrangement of the grooves or rails 16, respectively, is chosen thereby such, that frame 14 in the sleeping position of the furniture piece in accordance with FIG. 4 assumes already a horizontal position and thereby a horizontal laying face results. It is also possible, to choose the oblique position of the grooves or rails 16, respectively, such that also in the position of FIG. 3, thus as in the use position of the furniture piece as individual bed, a horizontal position of the frame 14 and thereby of the cushions 4 and 5, respectively, results. For securing of the use positions of the furniture piece as a seating furniture (FIG. 2), as a single bed (FIG. 3) and as a double bed, rests 26 can be provided for the sliding pins 15 in the grooves or rails, 16, respectively.

The frame 14 is formed as a sliding face for the rollers or slides 9 arranged at the outer part 6 of the carriage and the sliding face carries the abutments 27.

The bedding chamber 11 is laterally and vertically closed up by boards 19 of flexible material, by example of textiles or synthetic material, so that the frame 14 is not hindered in its movement and the bedding provided in the bedding chamber 11 is correspondingly retained.
After the rolling out of the carriage 6 and 7 and the removal of the bedding from the bedding chamber 11, the cushion 4, which can be swingingly connected with the cushion 5 at the edge 13, is laid on the cover 12, afterward the cushion 2 is swung downwardly until it lies on the part 7 of the carriage. In this position a laying face for two persons with an inclined head support is created. The faces serving the laying between the cushions 4 and 5 are covered by means of any suitable material. For securing the cushion 2 a backrest (FIG. 2) and a wedge cushion (FIG. 4) abutments 33 can be provided laterally on the cushion 2 and counter abutments or complementary abutments 34, that latter adjustable, on the framework 1.

If another oblique position of the cushion 2, particularly a horizontal position is desired, then the swinging bearing for the backrest or the wedge cushion 2 can be connected with the framework 1 for adjustment as to height. In the embodiment of the swivel bearing shown in FIG. 5 the blade spring 20 is secured in slots 22 of bearing blocks 21. These bearing blocks 21 can be connected adjustable as to their height with the framework 1. In case of a height adjustment of the bearing blocks 21 the high position of the bearing pin 3 must also be varied, so that the cushion 2 obtains its position as a backrest in the seating position of the furniture.

In the embodiment of the swivel bearing in FIG. 6, a bearing pin 3 flattened on one side is again supported by a blade spring 20, which has longitudinal slots 23 for the passage of screws 24. The screws 24 enter into bearing blocks 25, which are again connected adjustable as to their height with framework 1.

In accordance with FIGS. 7 and 8 a joint bar 29 end is secured laterally on the cushion 2, which joint bar 29 carries a bearing pin 3. The joint bar 29 has projections 30, by example in form of throws, which extend outwardly and which in turn enter into recess 31 in the framework 1 extending concentrically to the rotary pins 3. The ends of the arched-shaped recesses 31 form end abutments for the projections 30 and secure the positions of the cushion 2 as a backrest and as a wedge cushion, respectively. Also particular, preferably adjustable abutments 32 can be provided in order to vary the positions of the cushion 2.

The shown and described embodiments serve only for an explanation of the essence of the present invention, without limiting the same to details. Thus, it is particularly possible to create a seating furniture by applying the present invention, which seating furniture can be transformed into a single bed. Also a seating furniture for two persons can be formed with a carriage divided in its center, the parts of which are capable of being rolled out separately, in order to create a bed for one or for two persons.

While I have disclosed several embodiments of the present invention, it is to be understood, that these embodiments are given by example only and not in a limiting sense.

I claim:

1. A convertible seat and bed furniture unit comprising:
   two telescope-like parts replaceable relative to each other, and constituting a carriage, a framework,
   said carriage movable mounted in said framework, the latter defining a rear portion, and defining a forward opening, said carriage mounted in said framework capable of being rolled-out in a forward direction away from said rear portion through said forward opening for converting said furniture unit into a bed and said carriage mounted in said framework capable of being rolled-in, in a rearward direction towards said rear portion through said forward opening for converting said furniture unit into a seat,
   a back cushion pivotally mounted on said framework adjacent said rear portion so as to be pivoted between a substantially rearward upwardly swung vertical position of said back cushion and a substantially forward downwardly swung horizontal position of said back cushion, said cushion constituting a backrest for a seat in said rearward upwardly swung position, and constituting a wedge cushion for a bed in said forward downwardly swung position,
   two additional cushions disposed on said carriage, said two additional cushions comprising an uppermost cushion being disposed on top of a lowerrmost cushion in said seat and during said rolling out, and gripping under, in the seat position, said back cushion swung rearward upwardly as a back rest,
   said carriage capable of being positioned in a partially rolled out position relative to said framework and constituting a single bed position in which position, a forward bottom edge of said back cushion maintained in the rearward upwardly swung vertical position and a rear edge of said additional cushions being disposed vertically on one other, and said carriage having a double-bed position in a maximum rolled out position relative to said framework, and in the double bed position said two additional cushions being positionable one behind the other, and capable of being laid down forward of said back cushion, the latter in said double-bed position being swingable forward downwardly as a wedge cushion with the formation of a double laying face,
   said telescopic parts including an inside disposed of said telescopic-like parts defining a bedding chamber, having a first engagement face for said uppermost of said two additional cushions positionable thereon in said double bed position, as well as for said wedge cushion when in said double-bed position, and said inside disposed part being supported on the floor,
   said telescopic parts including an outside disposed part being supported on the floor on a front part thereof, and forming a second engagement face for a lowermost of said two additional cushions, a cover receiving a wire insert to form an upper closure for said bedding chamber, being swingably mounted in a frame, said frame being swingably mounted on said inner part of said carriage and being equipped with slide pin means,
   said framework including obliquely rearwardly disposed groove means for releasably securing said slide pin means, roller means formed on a rear part of said outer disposed part of said carriage, and side parts of said frame being formed as slide faces for said roller means.

2. The furniture unit, as set forth in claim 1, which includes
abutment means disposed in said groove means for said sliding pin means for securing said carriage the position as a single bed, as a seat and as a double bed.

3. The furniture unit, as set forth in claim 1, which includes
abutment means disposed in the slide faces of the side parts of said frame for securing both parts of said carriage relative to each other.

4. The furniture unit, as set forth in claim 1, which includes
walls of flexible material to constitute a rear and lateral closure of said bedding chamber.

5. The furniture unit, as set forth in claim 1, which includes
a swivel bearing adjustably connected for height adjustment with said frame work for the pivotal mounting of said backrest and wedge cushion, respectively.

6. The furniture unit, as set forth in claim 5, wherein said swivel bearing includes a bearing pin flattened at least on one side, and yielding means supporting said bearing pin.

7. The furniture unit, as set forth in claim 6, wherein said yielding means comprises a blade spring.

8. The furniture unit, as set forth in claim 7, further comprising bearing blocks having slots, said blade spring is secured in said slots of bearing blocks, and said bearing blocks are adjustably connected with said framework for height adjustment.

9. The furniture unit, as set forth in claim 7, further comprising bearing blocks connected with said framework,

said blade spring has slots for securing the latter by means of screw means on said bearing blocks connected with said frame work for height adjustment.

10. The furniture unit, as set forth in claim 1, wherein a first abutment is disposed on said back and wedge cushion respectively, and adjustable counter abutments are disposed on the inside of said framework cooperating with said first abutment for securing said back cushion in a substantially vertical position as a backrest for said seat, and in a substantially horizontal position as a wedge cushion for said double bed position, respectively.

11. The furniture unit, as set forth in claim 1, which includes joint bar means secured laterally on said back cushion for the pivotal mounting of the latter, said joint bar means are pivoted on an inside portions to said framework and have outwardly directed projections, said framework has an arched-shaped recesses receiving said projections, and the ends of said recesses are formed as abutments for said projections for securing said cushion as a back rest in said substantially rearward upwardly swung vertical position and as a wedge cushion in said substantially forward downwardly swung horizontal position, respectively.

12. The furniture unit, as set forth in claim 11, which includes adjustable abutments disposed at the ends of said arched-shaped recesses.

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