Feb. 8, 1944. H. W. ARONSON 2,341,307

BED DAVENPORT

Filed May 24, 1941

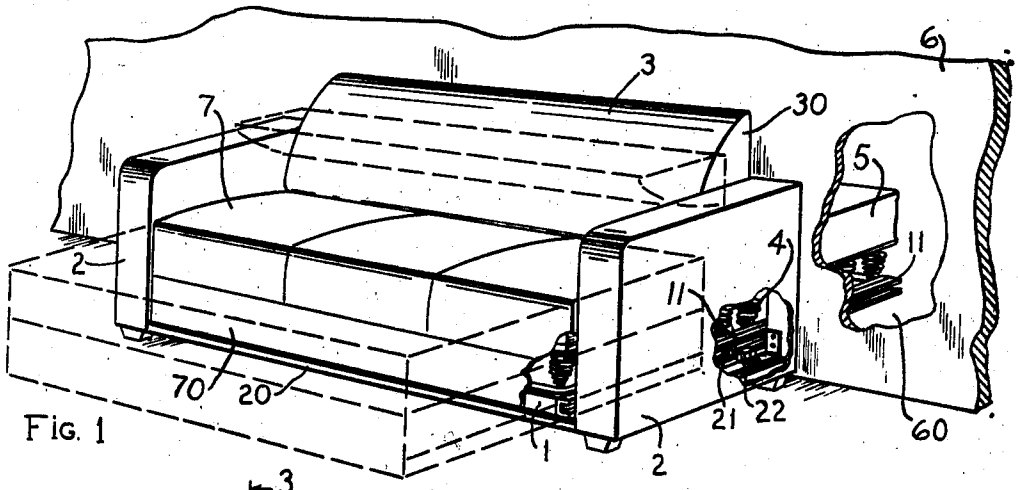
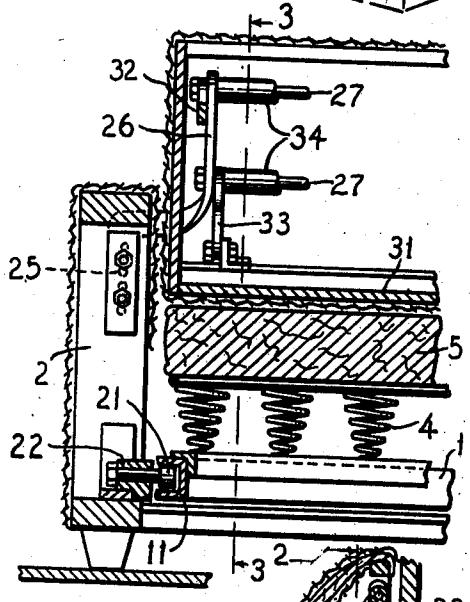


Fig. 1



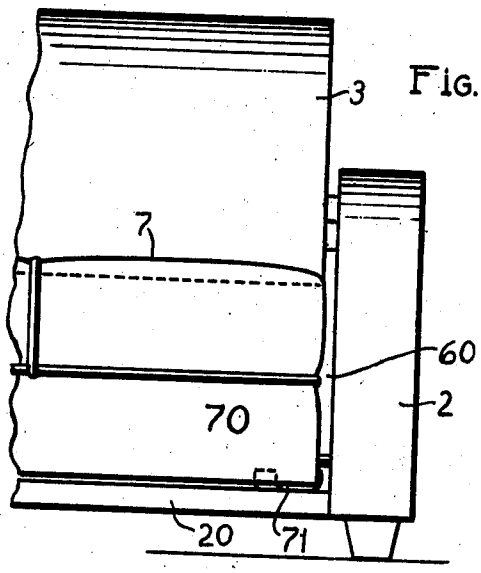


Fig. 2

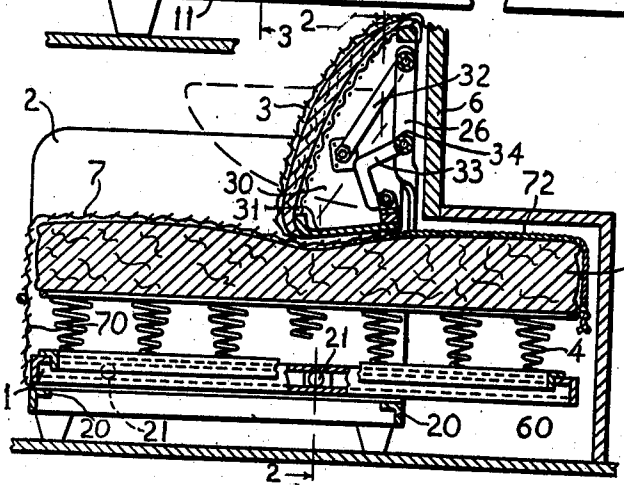


Fig. 3

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BED DAVENPORT

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12 Claims. (Cl. 5—17)

This invention relates to a piece of furniture suitable for use in hotels, apartments, and the like, which is convertible for use either as a davenport or as a bed.

Davenport beds, so-called, have long been known. In general these are primarily a davenport, the seat portion of which is made up of sections, sometimes piled one upon another, which unfold or fit together to constitute a bed, or, in some cases, the back is employed as a section of the bed. Normally such devices have to be first unfolded from the davenport form to the bed form, and then a bed must be made up. In other words, the bed is not previously made up, and is not available until after a certain amount of manipulation of the parts of the davenport, and then only after making up the bed from the stored bed clothing.

It has been known to provide beds which can be completely made up, and then stored away within a closet or other recess. Usually such beds fold up into a vertical position to roll away into a closet.

The first type of davenport bed, in addition to being clumsy and awkward to manipulate, is not particularly comfortable. Generally, if coil springs are provided, they are merely the bottom of the seat; sometimes such spring sections are piled one upon another, which makes the davenport seat high and not wholly comfortable to sit and relax upon. A mattress with modern built-in spring units is too bulky and awkward for inclusion in such a davenport, hence the mattress provided is seldom more than a thin pad, but even such a pad increases the height and decreases the comfort of the davenport, and is a makeshift in the bed. All such davenport beds are clearly identifiable as a compromise, and do not fully satisfy the proper and normal requirements either for a davenport or for a bed. The second type, the roll-away bed, furnishes a comfortable bed, but requires space for its manipulation and storage, and when it is not in use as a bed its comfort is not available. If during the daytime a davenport is also wanted in the room this must occupy other space.

It is the primary object of the present invention to provide a piece of furniture which provides all the daytime comfort of a davenport, utilizing therefor the spring unit and mattress unit of the bed, and which, when the bed is required, needs no manipulation other than to be drawn forward, whereupon the previously made up bed is instantly available.

It is a further object to provide such a piece of furniture which, when made up as a davenport, does not differ in appearance nor in comfort from a normal davenport, is not of unusual height, has no hard rail to catch beneath the knees of the occupant, may be provided with a rearwardly sloping seat and with a corded cover, and which is provided with a thoroughly comfortable, well padded back.

It is also an object, considering the piece of furniture as a bed, to provide a bed which utilizes a normal spring unit and a normal mattress unit, such as can be purchased commercially, and which hence can be as thoroughly comfortable as any bed.

It is also an object to provide such a bed davenport which can either be built into the room or which can be formed as a separate article of furniture, but which in any case has no support to rest upon and roll over a finished or carpeted floor. If formed as a separate article of furniture, it would normally have to be so placed that the excess width of the bed could be slid into a recess which must be provided in the wall.

Other objects, and particularly such as have to do with mechanical details, will appear as this specification progresses.

My invention comprises the novel parts and the novel combination and arrangement thereof, as shown in the accompanying drawing, described in this specification, and as will be more particularly, defined by the claims which terminate the same.

It will be convenient to refer to the "davenport" position of parts as meaning that position which they occupy when such part, or the device as a whole, is made up for use as a davenport, and similarly it will be convenient to refer to the "bed" position of parts as meaning that position which they occupy when the bed is ready for use.

In the accompanying drawing I have shown my invention in a typical form, it being understood that various changes may be made in the form, size, character, and arrangement of the parts, and in the details of upholstering and finish, without departing from the spirit and scope of the invention as defined in the claims.

Figure 1 is an isometric view, illustrating the invention in full lines in the "davenport" position, and in dash lines in the "bed" position. Parts are broken away for better illustration.

Figure 2 is in part a front elevation and in part a section on the line 2—2 of Figure 3.

Figure 3 is a section on line 3—3 of Figure 2.

Simplicity of construction and a minimum of

manipulation are among the objectives sought in the present construction. Accordingly the device is made up of three principal parts, namely, end frames 2, which rest upon the floor, joined by longitudinals 20 and 21 (or by reason of the connection of both end frames to the wall 6) into a floor-engaging frame, a bed frame 1 which is interposed between the end frames 2 and supported from the floor-engaging frame for forward and rearward sliding movement with relation to the floor-engaging frame, and a back 3. Except for the back, which preferably is hollow for storage of pillows and extra bedding, the detail construction of these three principal parts is largely immaterial.

The end frames 2 are preferably spaced apart about the same distance as the head and foot of a normal bed. The bed frame 1 is of a size which corresponds to the size of a normal bed, the length, interposed between the end frames 2, being equivalent to the length of a normal commercial spring unit 4 and mattress unit 5, which rest upon the bed frame 1. The width of the bed frame may vary as desired, but usually it would be of a width equal to the width of a double bed.

The bed frame has no direct support upon the floor, in any position. It is supported upon the floor-engaging frame and between the two end frames 2, for sliding forwardly and rearwardly, as has been described, solely by means which interengage between the bed frame and the floor-engaging frame, or more specifically in the form shown, between the bed frame and the end frames. The function of this interengagement is not only to support the retracted bed frame from the floor, and to provide for sliding of the bed frame, but also to support its overhanging forward edge in cantilever fashion, when drawn forwardly into bed position. At the same time the support for the bed frame can occupy but little vertical height, for the spring unit 4 and mattress unit 5 are each seven inches high, and the height of a normal davenport seat is about eighteen inches. Only about four inches is available for the bed frame itself and for its support, in all positions, clear of the floor.

This is conveniently accomplished, however, by forming the end elements 11 of the bed frame as channels opening outwardly, and by supporting at least two spaced rollers 21 in brackets 22 upon the interior of each of the end frames 2, and closely fitting within the channels 11. These rollers form guides for the bed frame and a cantilever support for the same when the bed frame is drawn forwardly. The bed frame 1 is thus supported close to the floor, as it must be to avoid too high a davenport seat, yet it never engages the floor. Any such engagement, as by feet depending from the bed frame, would mar and wear the floor or a rug thereupon, and can not be permitted.

In installing the device, since the bed is wider than a normal davenport, it will be convenient to provide a recess 60 in the wall 6, into which the excess width of the bed may be pushed. Since, then, the device must be located in one fixed position it might well be built in place, except that it is more conveniently manufactured as a complete unit, ready for installation. It may be desirable to provide means to fix such unit in position with relation to the recess 60. Such means have not been illustrated here, but are obvious.

The back 3 is composed of solid ends 30, a bottom 31, and the normal cushioned front portion, backed by flat or mesh-like springs. The whole may be arranged in such manner that the back is hollow. It is supported either from the wall 6 direct or, preferably, from brackets 26 upstanding from the back of the end frames 2. These brackets may be adjustably mounted as indicated at 25 for vertical adjustment of the back relative to the mattress.

The back is supported from its fixed support, the brackets 26, for instance, by pairs of links consisting of the long upper link 32 and the shorter angled lower link 33, pivotally connected at their opposite ends, respectively, to the brackets 26 and to the solid ends 30. The corresponding links 33 are connected each to a spacer sleeve 34, whereby they swing conjointly and avoid cocking and sticking. A longitudinal 27 connects the brackets.

The arrangement described is a convenient one, and permits the back to be shifted from a generally upright "davenport" position to a semi-inverted "bed" position, as shown in dash lines. In the "davenport" position its lower front edge is at a level to depress the mattress 5, as shown in Figure 3, whereas in the "bed" position the back is clear of the mattress. In moving the back from the "davenport" position to the "bed" or out-of-the-way position the back is first raised, swinging both links 32 and 33 upward, to clear the mattress 5. The upper edge of the back may then be tilted forward generally about the axis of the pivotal connections of links 32 with the back until it has been rotated through approximately 90 degrees. By this movement the lower end of link 33 is swung upward so that the links are in crossed position, the pivotal connections of links 33 with the back being above and rearward of the pivotal connections of links 32 with the back.

In such rotated position the back is now pushed rearwardly, whereupon links 32 assume approximately the same positions as they did when the back was in "davenport" position, whereas the lower links 33 are swung even farther upward, and the portions of these links adjacent their ends attached to the back are substantially horizontal, while the other portions of such links are in upright position. The upper and lower links thus maintain this crossed relationship as long as the back is in the "bed" or out-of-the-way position. To return the back to "davenport" position the same steps are performed in reverse sequence, that is, the back is pulled forward and then the upper edge of the back is rotated upward and backward until the back has been rotated through approximately 90 degrees. The back is then moved downward again to press against the mattress 5.

The purpose of thus depressing the mattress, when the back is in its "davenport" position, is to restrain the bed frame 1 and the spring and mattress units supported upon it from shifting forwardly. This depression of the mattress serves a further purpose in that a removable davenport cover 7, which may be corded to simulate a normal davenport, may not shift relative to the mattress upon which it is spread. This cover may have a forward skirt 70 which covers in the front edge of the mattress and spring units and the bed frame, and which has elastic loops 71 which engage across and beneath the corners of the bed frame to hold down the front skirt 70,

Its rear portion extends beneath the back, and may be provided with rearwardly extending cords 72 for securement at the rear of bed. By adjustment of the height of the back as indicated at 25 the back may be caused to depress the mattress and the cover thereon to any extent required.

It is believed that it will be clear that the bed is or may be at all times completely made up. It is covered by the cover 7, and when slid rearwardly to the davenport position, and with the back lowered, the article is to all appearances a normal davenport. It is normal in its height, in its appearance, and in its comfort. Whenever required as a bed it is only necessary to shift the back out of the way, to slide the bed forward, and to remove the cover, and immediately the bed is ready for occupancy.

What I claim as my invention is:

1. A convertible davenport bed comprising two end frames spaced apart, longitudinals connecting them to constitute a floor-engaging frame, a bed frame spanning the space between said end frames and of a width to support a normal removable spring unit and mattress unit, considerably wider than the usual davenport seat, all interposed between the end frames, means carried by the bed frame and engaged with complemental means carried by the floor-engaging frame, to guide the bed frame for movement in its own plane, from a rearward "davenport" position substantially wholly within said end frames to a forward "bed" position, wherein its forward edge is projected materially forwardly of the end frames, said guiding means constituting a support for the overhanging forward edge of the bed frame in the "bed" position, a back and means supporting and guiding the same from and for movement relative to the floor-engaging frame, from a "davenport" position, extending upwardly from a mattress which rests upon the bed frame, to an out-of-the-way position, upraised clear of and spaced above such mattress, whereby upon drawing forward said bed frame and mattress unit the entire surface thereof is available as a bed.

2. The combination of claim 1, characterized in that the back, in "davenport" position, has its lower forward edge at a level to depress the mattress, thereby to restrain sliding movement of the bed frame and units supported thereon.

3. The combination of claim 1, including a removable cover fitting the front edge and top of the bed frame and the units supported thereupon, and extending beneath the back when the back and the bed frame are in "davenport" position, and characterized in that the lower front edge of the back, in davenport position, is at a level to depress the mattress, thereby restraining shifting of the cover relative to the mattress, or of the bed frame and supported units relative to the end frame.

4. The combination of claim 1, the back supporting and guiding means including brackets upstanding from the rear of each end frame, and links thereon constituting the support for the back and swingable between generally parallel relationship wherein the back is in "davenport" position and crossed relationship when the back is in the out-of-the-way position.

5. The combination of claim 1, including brackets upstanding from the rear of each end frame, links thereon constituting the support for the back, and means to adjust said brackets vertically upon the end frames, whereby to adjust the height of the lower edge of the back, in "davenport" position, relative to the mattress.

6. The combination of claim 1, characterized in that the back is hollow, for storage of pillows and extra bedding, and in the inclusion of a pair of links to support the back, at each end, and to guide it for movement from its "davenport" position to a semi-inverted out-of-the-way position.

7. A convertible davenport comprising two end frames spaced apart approximately the spacing of the head and foot of a normal bed, means connecting the two end frames to support them thus spaced, a bed frame spanning the space between said end frames and of a width considerably greater than said end frames to support a removable spring unit and mattress unit considerably wider than the usual davenport seat, means carried by the end frames and engaging complemental means carried by the bed frame to guide the latter for edgewise movement between a rearward position wherein the forward edge of the bed frame is disposed substantially flush with the front edges of said end frames, and a forward position wherein the forward edge of the bed frame projects a substantial distance forward beyond the front edges of said end frames, said means constituting, in the forward position of said bed frame, a cantilever support for that portion of the bed frame projecting beyond said end frames, and a back resting upon the mattress unit in the rearward position of said bed frame to divide the mattress unit into a forward portion having a width of the usual davenport seat and a rearward portion, and to provide a back rest for such forward portion.

8. A convertible davenport bed comprising two end frames spaced apart approximately the spacing of the head and foot of a normal bed, means connecting the two end frames to support them thus spaced, a bed frame spanning the space between said end frames and of a width considerably greater than said end frames to support a removable spring unit and mattress unit considerably wider than the usual davenport seat, means carried by the end frames and engaging complemental means carried by the bed frame to guide the latter for edgewise movement between a rearward position wherein the forward edge of the bed frame is disposed substantially flush with the front edges of said end frames, and a forward position wherein the forward edge of the bed frame projects a substantial distance forward beyond the front edges of said end frames, said means constituting, in the forward position of said bed frame, a cantilever support for that portion of the bed frame projecting beyond said end frames, a back resting upon the mattress unit in the rearward position of said bed frame to divide the mattress unit into a forward portion having a width of the usual davenport seat and a rearward portion, and to provide a back rest for such forward portion, and means supported from said end frames and supporting said back for movement between the position resting upon the mattress unit to a position wherein the upper edge of the back is tilted forwardly through a substantial angle and said back is raised to a position above the mattress to remain out of contact therewith during movement of the bed frame between its rearward and its forward position.

9. In a davenport structure including a seat

member, a back, and back supporting means including upper and lower links, each having one end pivoted to said back and the other ends of said links being fixedly pivoted in vertically spaced relationship, said links being swingable to guide the back for movement between a position wherein the back rests upon the seat member of the davenport structure, and a position wherein the upper edge of the back is rotated forwardly and downwardly through a substantial angle.

10. In a davenport structure including a seat member, a back, and back supporting means including an upper link having one end pivoted to said back and the other end fixedly pivoted, a lower link of shorter effective length having one end pivoted to said back below and rearwardly of the pivotal connection between the upper link and said back and having its upper end pivoted fixedly below the fixedly pivoted end of the upper link, said upper and lower links being swingable between generally parallel relationship, wherein the back rests upon the seat member of the davenport structure, and crossed relationship wherein the upper link is in substantially the same position but the pivotal connection between said lower link and said back is disposed above and rearwardly of the pivotal connection of the upper link with said back, and the upper edge of the back is in a position rotated forwardly and downwardly through an agle of approximately 90 degrees from the position assumed with the upper and lower links in such generally parallel relationship.

11. In a davenport structure including a seat member, a back, and back supporting means including an upper link having one end pivoted to said back and the other end fixedly pivoted, a lower angled link of shorter effective length having one end pivoted to said back below and rearwardly of the pivotal connection between the upper link and said back and having its upper end pivoted fixedly below the fixedly pivoted end of the upper link, said upper and lower links being swingable between generally parallel relationship, wherein the back rests upon the seat member of the davenport structure, and crossed relationship wherein the upper link is in substantially the same position but the pivotal connection between said lower link and said back is disposed above and rearwardly of the pivotal connection of the upper link with said back, the portion of said lower link adjacent its pivotal connection with said back is disposed generally horizontally and the other portion thereof is upright, and the upper edge of the back is in a position rotated forwardly and downwardly through an angle of approximately 90 degrees from the position assumed with the upper and lower links in such generally parallel relationship.

12. In a davenport structure including a seat member, a back, and back supporting means including two upper links one at each end of the back and each having one end pivoted to said back and the other end fixedly pivoted, two lower angled links of shorter effective length one at each end of the back and each having one end pivoted to said back below and rearwardly of the pivotal connection between the upper link at the same end of said back and said back having its upper end pivoted fixedly below the fixedly pivoted end of the upper link at the same end of said back, said upper and lower links being swingable between generally parallel relationship, wherein the back rests upon the seat member of the davenport structure, and crossed relationship wherein the upper links are in substantially the same position but the pivotal connection between each lower link and said back is disposed above and rearwardly of the pivotal connection of the upper link at the same end of said back with said back, the portion of each lower link adjacent its pivotal connection with said back is disposed generally horizontally and the other portion thereof is upright, and the upper edge of the back is in a position rotated forwardly and downwardly through an angle of approximately 90 degrees from the position assumed with the upper and lower links in such generally parallel relationship, and means joining the upper links and joining the lower links at opposite ends of the back for conjoint swinging of all said links.

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