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CONVERTIBLE SOFA

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Fig. 1

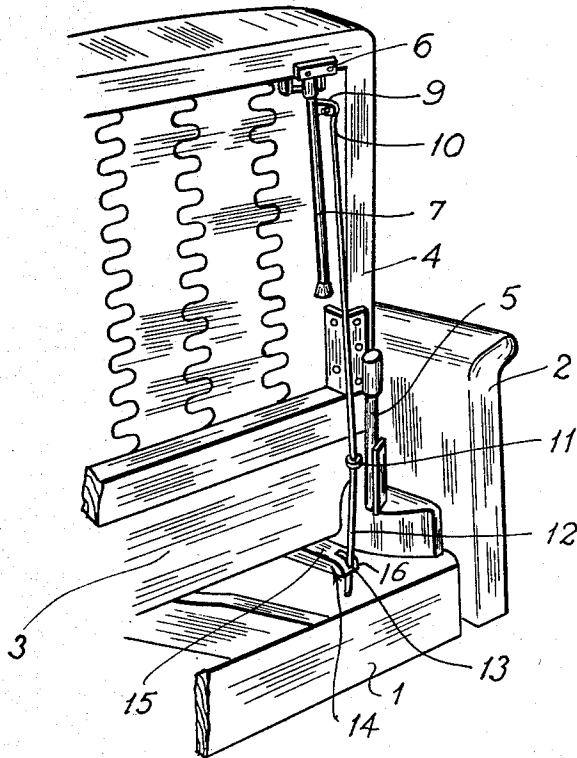
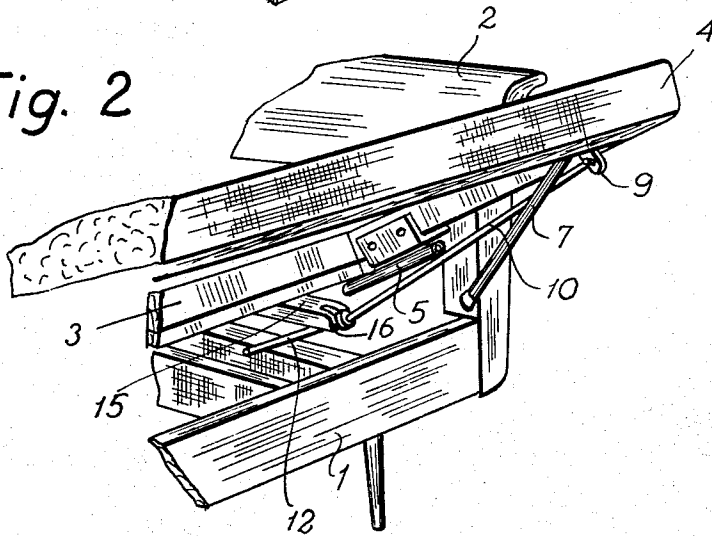


Fig. 2



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CONVERTIBLE SOFA

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1 Claim. (Cl. 5-47)

The invention relates to a convertible sofa with a rectangular seat and a rectangular back pivotally connected with its rear edge, the said sofa being preferably of the kind in which the sitting furniture is converted into bed furniture by raising the front edge of the seat, whereby the connected edges are pushed forwardly by means of guides provided in the side members of the sofa, and the back is swung down into a substantially horizontal position, whereas the seat is in a substantially vertical position, but is subsequently swung down into horizontal position and its front edge supported by legs which may be swung outwards.

It is the object of the present invention to provide a simple and safe mechanism adapted to automatically swing out the legs into their operative position when the sofa is converted from an article of sitting furniture to an article of bed furniture and likewise automatically to return the legs to their inoperative position when the unit is converted from an article of bed furniture to an article of sitting furniture.

An essential feature of the convertible sofa according to the invention is that each leg has an arm pivotally connected with a push rod extending beneath the seat and slidably received in a slit which is provided in a retaining member attached to the back and which carries a stop member adapted to abut the retaining member when the seat is swung down, the leg being furthermore connected with a spring adapted to pass the leg into returned position.

By this simple mechanism the push rod will be displaced through the slit when the seat is being swung down into horizontal position, and as soon as the stop member strikes the retaining member, the arm provided on the leg will be activated by the push rod, so that the leg, overcoming the resistance of the spring, swings out into its operative position.

In a convenient embodiment the retaining member may consist of a girder which extends parallelly with the end edge of the back to a certain point in front of its longitudinal edge and has an upwardly facing surface which at the front end of the member curves downwardly to form a forward-facing surface, the slit for the push rod extending over the curved surface and a part of the two other surfaces.

In this embodiment the push rod will, with the seat swung down, both with the sofa in the position of sitting furniture and in the position of bed furniture, be located substantially horizontally and will thus occupy a minimum of space in the sofa. While the seat is being swung, the pressure bar is simultaneously passed in a curved movement upwards through the slit so that its free end moves along a path lying beneath and as closely as possible to the two sofa parts.

An embodiment of a convertible sofa in accordance with the invention will now be described with reference to the drawing, in which

FIGURE 1 shows a part of the convertible sofa with its seat swung up, and

FIGURE 2 is the same with the said part swung more downwards.

The sofa consists of an underpart 1 and two side members 2, between which there is supported a back 3 and a seat 4. The seat and the back are pivotally connected

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with each other by means of hinged members 5 and is guided by means of guides provided in the side members 2. The said guides are adapted in such manner that the sofa may be converted from an article of sitting furniture to an article of bed furniture by the user grasping beneath the front edge of the seat 4, swinging the said seat up into vertical position as shown in FIGURE 1. As a result, the back slides forward and downward so that it is brought into horizontal position. The remaining operation of converting the sofa into a bed furniture unit consists in swinging the seat in the opposite direction into horizontal position, whereby the back and the seat in combination form a horizontal twin bed.

Onto the seat 4 is screwed a metal member 6 forming pivotal support for a supporting leg 7. The attachment is of such kind that the leg can be swung out from the position shown in FIGURE 1, in which it is lying substantially along the end edge of the seat 4 in a vertical plane into a position in which the leg is at right angles to the plane of the seat 4. The pivot about which the leg turns is surrounded by a helical spring which is adapted to counteract the said outward movement of the leg, that is to urge the leg to turn inwards towards the inoperative position indicated in FIGURE 1.

The leg is provided with an arm 9 which is pivotally connected with a push rod 10 with attached stop member 11. The said member may be adjusted in any desired position on the push rod 10, being secured by means of a screw. The lower part 12 of the push rod 10 is passed through a slit 13 provided in a retaining member 14 which consists of an angular girder screwed on to the bottom of the back 3 and having an upward-facing horizontal surface 15 which at the end of the member is curving downwards to form a forward-facing surface 16. The slit 13 extends over the curved section and a part of the horizontal surface and the vertical surface as shown in the figures.

The mechanism operates in the following manner: When the sofa is in the position in which it serves as sitting furniture, the seat 4 is substantially horizontal and the back 3 substantially vertical, e.g. rearwardly inclined. In this position the push rod 10 will be substantially horizontally disposed, extending through that part of the slit 13 which is formed in the forward-facing end surface of the girder 15. The leg 7 is in its inward-turned position, indicated in FIGURE 1. When the sofa is to be converted to bed furniture, the user grasps as mentioned beneath the front edge of the seat 4, swinging the said seat into the substantially vertical position indicated in FIGURE 1, whereby the push rod 10 is withdrawn from the slit 13. At the same time the back 3 slides downwards and forwards as mentioned into the position indicated in FIGURE 1, where it is horizontal.

In the last stage of the conversion movement from the vertical position of the seat 4 to a position in which the seat is horizontal, the part 12 of the push rod 10 will slide down through the slit 13 until the stop member 11 strikes the retaining member 15 as indicated in FIGURE 2. Further movement of the seat 4 will produce a pressure in the push rod 10 and a consequent actuation of the arm 9, whereby the leg 7 is swung out into its operative position. When the seat 4 has been brought completely into horizontal position, the position of the push rod 10 will be substantially horizontal, the part 12 being received in the girder 15.

When the unit is to be converted from a bed to an article of sitting furniture, the user again grasps about the front edge of the seat 4, raising the seat into vertical position as illustrated in FIGURE 1. By this movement the push rod 10 is withdrawn from the slit 13 and the spring will at the same time swing the leg 7 into its inoperative position.

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When the back and the seat are swung into the final sitting position, the push rod remains in the slit 13, substantially in the position shown in FIGURE 1, and as will appear from the foregoing specification and the drawing the mechanism for automatic outward movement of the leg requires little space and therefore no great height of the bottom part 1. In addition, the mechanism is of simplest possible design. There is a leg 7 at either end of the seat 4 and a corresponding operating mechanism.

What I claim and desire to secure by Letters Patent is:

A convertible sofa adaptable to be connected from a seat form to a bed form said sofa comprising a seat member and a back member, said seat member being connected at its rear edge to the lower edge of said back member and each movable from a seat position to a horizontal bed position, said seat member provided on its underside adjacent its forward edge with pivotal support means, adapted to be pivotally moved from a first position wherein said support means lies in a plane substantially parallel to the plane of said seat member to a second position wherein said support means lies in a plane normal to the plane of said seat member, arm means secured to said support means for pivotal connection with push rod means extending beneath said seat member, retaining means secured at the lower edge of said back member and extending forwardly therefrom in a plane parallel with said seat member, said retaining means having an upwardly facing surface curving downwardly at the free end thereof to provide a forwardly facing surface, said retaining means

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provided with a slit means extending over the curved portion thereof and over a portion of said upwardly facing surface and said forwardly facing surface, the free end of said push rod means being slidably received in said slit means and provided with adjustably positioned stop means adapted to abut the retaining means so that when said seat member is moved from a horizontal position forwardly and upwardly to a vertical position and simultaneously said back member is moved from a vertical position to a horizontal position and subsequently said seat member is moved from said vertical position to a horizontal position to provide a bed form said push rod slidably engages said slit means and said support means pivots from said first position to said second position on abutment of said stop means with said retaining means on movement of said seat member from said vertical position to said horizontal position.

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