March 10, 1964 D. BENDELL 3,123,836

DUAL PURPOSE SOFA

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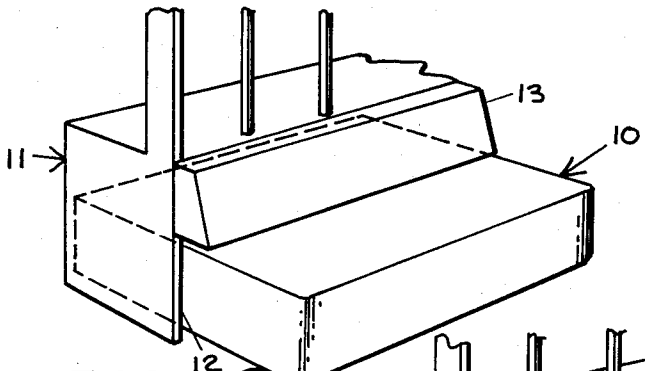


FIG. 1

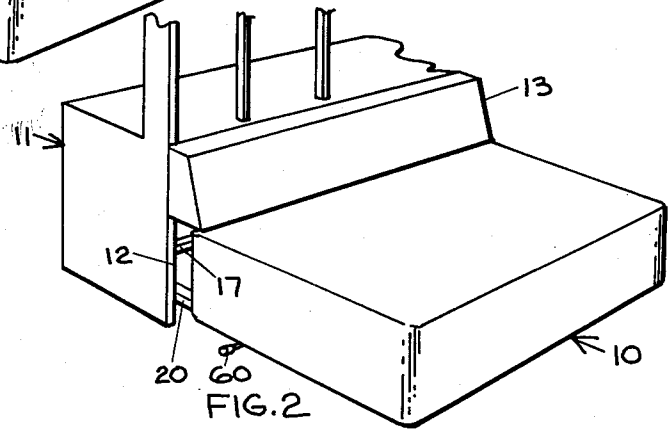


FIG. 2

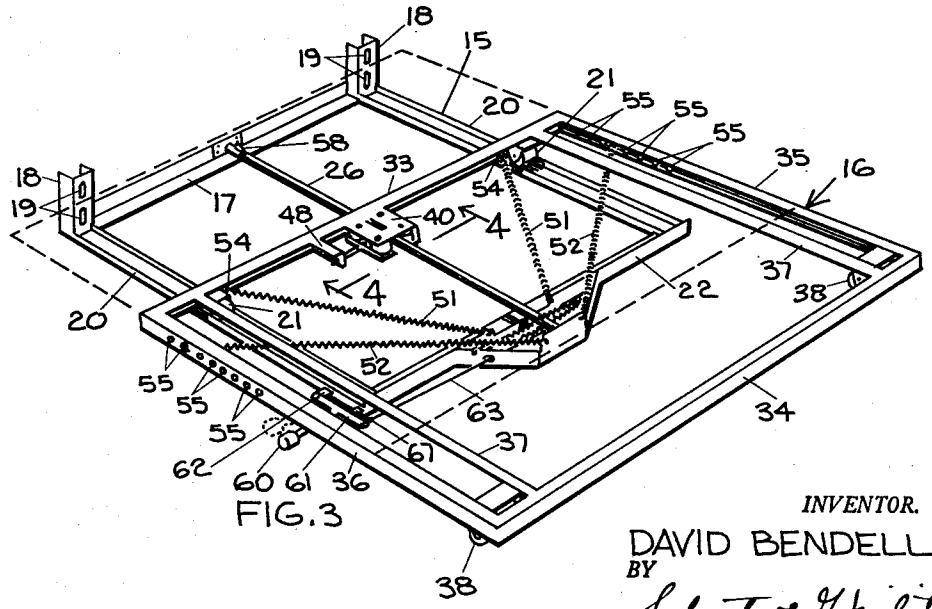


FIG. 3

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DUAL PURPOSE SOFA

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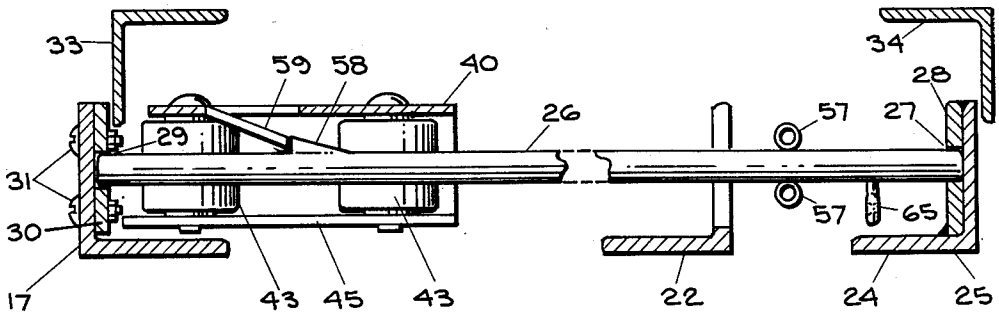


FIG. 5

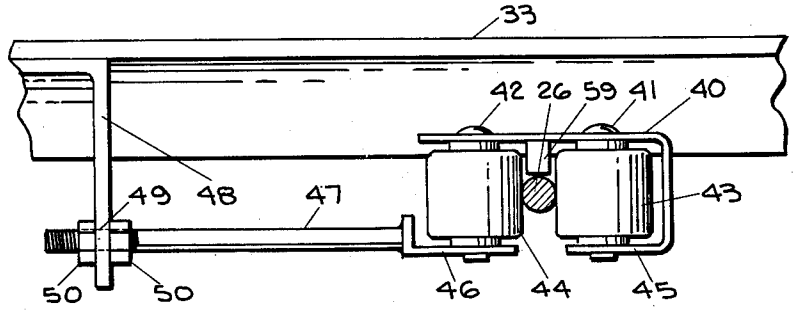


FIG. 4

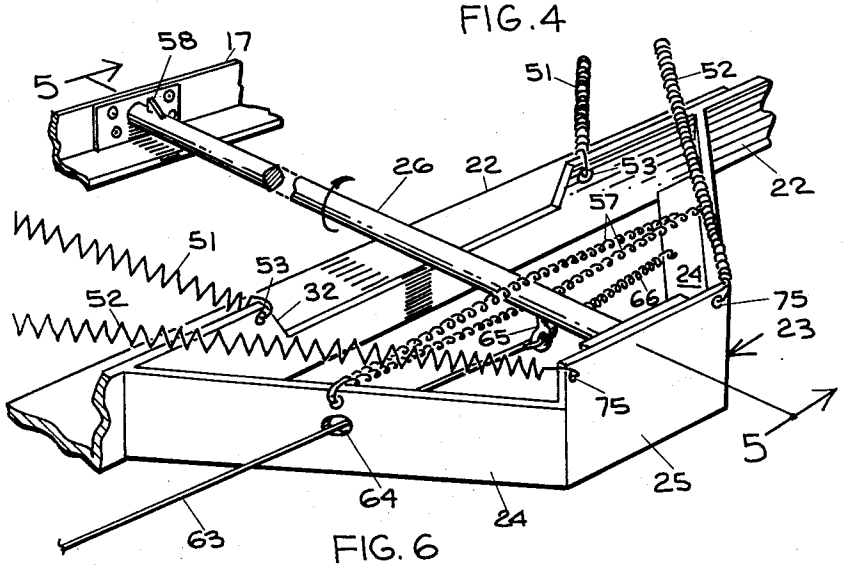


FIG. 6

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DUAL PURPOSE SOFA

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3 Claims. (Cl. 5—17)

This invention relates to furniture and is more particularly directed to a dual purpose sofa and bed combination.

A principal object of the present invention is to provide a dual purpose sofa which is adapted to be positioned for sitting or daytime purposes and upon actuation of an operating lever, which will automatically roll outwardly for use as a bed.

Another object of the present invention is to provide a dual purpose sofa with a plurality of springs, some of which are under tension upon the release of which the sofa is made to slide outwardly to its extended position and other springs which act as a resilient stop member for arresting the sofa at its extended position without jarring the sofa.

Another object of the present invention is to provide a dual purpose sofa described as hereinabove with casters positioned in tracks and guide means for maintaining the rollers in the tracks without binding so that very little effort would be required to slide the sofa back to its extended position and return it when desired to its original position.

A further object of the present invention is to provide a dual purpose sofa which is simple in its construction and readily operated to shift it to either of its dual purposes and inexpensive in cost.

A still further object of the present invention is to provide a dual purpose bed having adjustment means for controlling the amount of tension in the springs that shift the sofa to its extended position.

With these and other objects in view, the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawings but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

FIGURE 1 is a perspective view of a dual purpose sofa embodying my invention with the sofa shown in its retracted position for sitting purposes.

FIGURE 2 is a similar view showing the sofa having rolled out to its extended position for sleeping purposes.

FIGURE 3 is a similar view showing the support and operating mechanism of my dual purpose sofa.

FIGURE 4 is a fragmentary cross sectional view taken along a line 4—4 of FIGURE 3.

FIGURE 5 is a similar view taken along the line 5—5 of FIGURE 6.

FIGURE 6 is a fragmentary enlarged view of the guide and brake structure of my dual purpose sofa.

Referring to the drawings wherein like numerals are used to designate similar parts throughout the several views, the numeral 10 refers to my dual purpose sofa shown by way of illustration only retractable within a room divider 11. Mounted across an opening 12 through which the sofa bed 10 extends is a bolster 13 serving as a back rest for people sitting on the sofa bed 10 when the sofa bed 10 has been retracted into the room divider 11 as shown by FIGURE 1. When the sofa bed 10 is being extended to its sleeping position, the bolster 13, being secured to the room divider 11, will permit the sofa 10 to

slide outwardly on a rack 15 as is explained in detail hereinafter. The sofa 10 will slide outwardly until well clear of the bolster 13 as shown by FIGURE 2, the sofa bed 10 then being ready for use for sleeping purposes.

The rack 15 upon which the mattress frame 16 is slidably mounted consists of a support member 17 having fastening members 18 mounted at the ends thereof. The fastening members 18 are provided with openings 19 for receiving fasteners in securing the rack 15 to the inner wall of the room divider 11 so that the rack 15 will not have a tendency to move about when the sofa bed 10 is moved from one position to the other. A pair of U-shaped channel members 20 forcing tracks for casters 21 extend outwardly of the support member 17. The outer ends of the tracks 20 are secured to a cross member 22. A guide bracket 23 is mounted on the cross member 22, consisting of a pair of diagonally disposed angle members 24 welded or otherwise secured at one end to the cross member 22 and have a face plate 25 secured at the other end. A removable guide rod 26 which extends between the face plate 25 and the support member 17 is received at one end by a bore 27 in a plate member 28 welded to the inner surface of the face plate 25. The other end of the guide rod 26 is fitted in a bore 29 in a plate member 30 fastened by bolts 31 to the inner surface of the support member 17. The guide rod 26 is readily removed by merely unfastening the bolts 31 and lifting out the plate member 30 along with the end of the guide rod 26 which can now be removed from its position in the plate member 28. A slot 32 cut in the upper edge of the cross member 22 permits the guide bar 26 to lie below the level of the rack 15.

The mattress frame 16 itself is of conventional construction consisting of angle members 33, 34, 35 and 36 joined at their ends to form a rectangular support for the sofa 10 with angle members 37 extending between the angle members 33 and 34 in spaced and parallel relation to the angle members 35 and 36. The angle members 37 provide rigidity to the mattress frame 16 and also serve as a support for the front floor engaging casters 38. The casters 21 which roll in the tracks 20 lie directly beneath the angle members 37 and are secured to the angle members 37 in close proximity to the angle members 33.

Means are provided for accurately guiding the rollers or casters 21 within the tracks 20 without binding therewith comprising a roller supporting bracket 40 of L-shaped cross section with two rows of pins 41, 42 mounted thereon in depending fashion on each side of the guide rod 26. A pair of rollers 43 and a pair of rollers 44 are rotatably mounted on the pins 41, 42 respectively and engage the guide rod 26. The lower ends of pivot pins 41 are secured to an arm 45 of the bracket 40 while the lower ends of the pins 42 are secured to a plate 46 which is not attached to the bracket 40 but is secured to a rod 47 which extends to a support member 48 fastened to the angle member 33. The rod 47 extends through a bore 49 in the support bracket 48 with nuts 50 mounted on either side of the bracket 48 whereby the rollers 44 may be adjusted to bear against the guide rod 26 at any desired pressure to maintain the rollers 43, 44 in contact relation with the guide rod 26. Also, when it is desired to remove the frame 16 from the support or rack 15, the inner nut 50 may be unthreaded to slide the rollers 44 away from the guide rod 26 and disengage the rollers 43 and 44 from the guide rod 26. The mattress frame 16 may then be lifted off the rack 15.

In order that the sofa bed 10 may slide outwardly without any physical effort required of the user, a plurality of coil springs 51 and 52 yieldingly urge the mattress frame 16 to slide outwardly of the rack 15. The coil springs 51 extend between bores 53 formed on the cross

member 22 in proximity of the slot 32 and bores 54 formed in the angle member 33 of the mattress frame 16. The second pair of coil springs 52 which augment the yielding forces of the coil springs 51 extend between bores 75 on the face plate 25 and one of a plurality of bores 55 formed on the angle members 35, 36 of the mattress frame 16. By a proper selection of the bores 55 to affix the end of the coil springs 52 will provide the mattress frame 16 with the proper force for sliding outwardly on the rack 15. To absorb the force at which the bracket 40 imparts on the face plate 25 at the end of the forward movement of the mattress frame 16 on the rack 15 there is provided a pair of coil springs 57 which are stretched tightly and extend between the diagonally disposed angle members 24 in close proximity to the face plate 25. One of the coil springs 57 is disposed above the guide rod 26 while the other is below the guide rod 26, both coil springs 57 being in the path of the rollers 43 and 44.

Means are provided for releasably securing the mattress frame 16 in its retracted position on the rack 15 comprising an inclined catch member 58 mounted on the top surface of the guide rod 26 in proximity of the support member 17. In cooperative engagement with the catch member 58 is a detent 59 extending downwardly of the roller supporting bracket 40. The detent 59 is struck from the metal of the bracket 40 and bent downwardly as shown best by FIGURE 5. To release the detent 59 from engagement with the catch member 58, the guide rod 26 is rotated by a handle 60 which extends below the angle member 36 at the mid-portion of a lever 61. The lever 61 is pivoted at one end to a bracket 62 while at the other end a wire 63 is secured thereto. The wire 63 extends through a bore 64 in the left angle member 24 as seen in FIGURE 6 and is secured to a post 65 welded or otherwise secured to the bottom surface of the guide rod 26. A coil spring 66 is secured at one end to the post 65 and at the other end to the right angle member 24 to yieldingly rotate the guide rod 26 in an opposite direction to that produced by actuation of the handle 60. A stop 67 which engages the lever 61 limits the rotational movement of the guide rod 26 effected by the coil spring 66 to a position wherein the catch member 58 resumes its aligned position with the detent 59.

In accordance with the above indicated structure, when the sofa 10 is in its retracted or daytime position for sitting purposes it will assume the position shown by FIG. 1. In this position the coil springs 51, 52 will be under tension forces and the catch member 58 will be engaged by the detent 59. When it is desired to have the sofa 10 assume the extended or nighttime position for sleeping purposes, the handle 60 is actuated to cause the lever 61 to pivot on the pin 62 away from the stop 67 against the coil spring pressure 66. The guide shaft 26 will rotate clockwise as viewed by FIGURE 6 and the catch member 58 will rotate out of alignment with the detent 59 releasing the bracket 40 and the mattress frame 16. The coil springs 51 and 52 yieldingly force the mattress frame 16 to slide forwardly on the rack 15 with the rollers 21 rolling along the tracks 20 guided by the rollers 43 and 44 which engage the guide rod 26. When the mattress frame 16 arrives at its approximate extended position on the rack 15, the forward pair of rollers 43 and 44 will impinge on the pair of tensioned coil springs 57. The latter will absorb the residual forces of the coil springs 51, 52 and bring the sofa 10 to a stop without any jarring effect. Upon release of the handle 60, the coil spring 66 will cause the guide rod 26 to rotate back to its original position and the lever 61 to swing back to its abutting relationship with the stop 67. The catch member 58 is now in position to be engaged by the detent 59 when the mattress frame 16 is rolled back to its retracted position.

When it is desired to return the sofa 10 to its retracted position, all that a person need do is push rearwardly on the sofa 10 to cause the mattress frame 16 to slide rearwardly on the rack 15 until the detent 59 has slid beyond the catch member 58 and become engaged therewith.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A dual purpose sofa comprising a mattress frame having side wall portions, support means, a pair of spaced apart tracks secured to said support means and extending under said mattress frame, roller means secured to said mattress frame and rotatably mounted in said tracks, a plurality of coil springs connecting said side wall portions at one of a plurality of positions adjacent one end of said mattress frame and one end of said support means yieldingly urging said mattress frame to slide on said roller means along said tracks to an extended position adjacent said one end of said support means, a guide rod mounted on said support means, a bracket mounted on said mattress frame at said one end thereof, a pair of rollers mounted on said bracket, said rollers engaging said guide rod, interengaging latch means mounted on said guide rod and said mattress frame for releasably maintaining said mattress frame in a retracted position and operating means connected to said guide rod for releasing said latch means and permitting said mattress frame to slide on said tracks to its extended position and brake means mounted on said support means in the path of said pair of rollers whereby said pair of rollers impinge on said brake means to stop said mattress frame in said extended position.

2. A dual purpose sofa comprising a mattress frame, support means mounted alongside and extending beneath said mattress frame, a pair of tracks mounted in substantially spaced and parallel relation on said support means and extending below said mattress frame, a pair of roller members secured to said mattress frame and rotatably mounted in said tracks, a second pair of floor engaging roller members secured to said mattress frame, a guide rod mounted on said support means between said tracks and in substantially parallel relation therewith, a roller support bracket mounted on said mattress frame adjacent one end thereof and in alignment with said guide rod, a plurality of pairs of rollers rotatably mounted on said bracket, one pair of rollers engaging said guide rod on one side and the other pair of rollers engaging said guide rod on the other side, adjustable means cooperatively engaging one pair of said rollers for varying the pressure of said rollers against said guide rod, a plurality of coil springs secured at one end to said support means and at the other end to said one end of said mattress frame yieldingly urging said mattress frame to an extended position relative to said support means, a latch member mounted on said guide rod adjacent the other end of said support means, a detent mounted on said bracket engaging said latch member, lever means operatively connected to said guide rod for releasing said latch member from said detent, return spring means yieldingly urging said latch member in position to be engaged by said detent, and further spring means mounted at the other end of said support means and extending in the path of said pairs of rollers whereby upon the actuation of said lever means said plurality of springs will cause said mattress frame to roll forwardly to an extended position said further spring means will be engaged by said pairs of rollers and effect the braking of said mattress frame.

3. The structure as recited by claim 2 taken in combination with means for adjustably mounting said plurality of coil springs on said mattress frame for adjusting the spring pressure yieldingly forcing said mattress frame to an extended position.

References Cited in the file of this patent

UNITED STATES PATENTS

475,230 Zumdick ---------- May 17, 1892

(Other references on following page)

5

UNITED STATES PATENTS

1,066,518	Nickol et al.	July 8, 1913
1,259,825	Basile	Mar. 19, 1918
1,396,864	Mayne	Nov. 15, 1921
1,721,889	Travis	July 23, 1929
2,240,216	Johnson	Apr. 29, 1941

6

2,370,851	Eppenstein	Mar. 6, 1945
2,642,584	Peterson et al.	June 23, 1953
2,694,207	MacEachron	Nov. 16, 1954
2,943,333	Blecker et al.	July 5, 1960
3,027,570	Kamp	Apr. 3, 1962
3,041,635	Holtzclaw	July 3, 1962