

Oct. 30, 1962

H. N. BROYLES
CONVERTIBLE COUCH

3,060,460

Filed Dec. 21, 1959

2 Sheets-Sheet 1

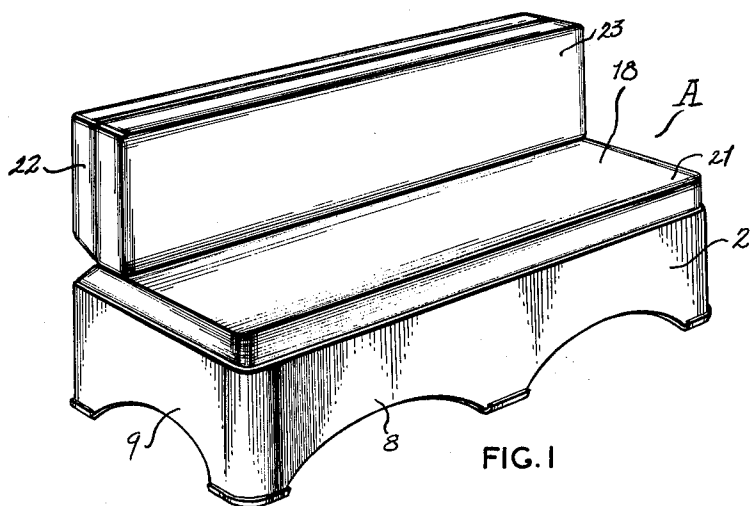


FIG. 1

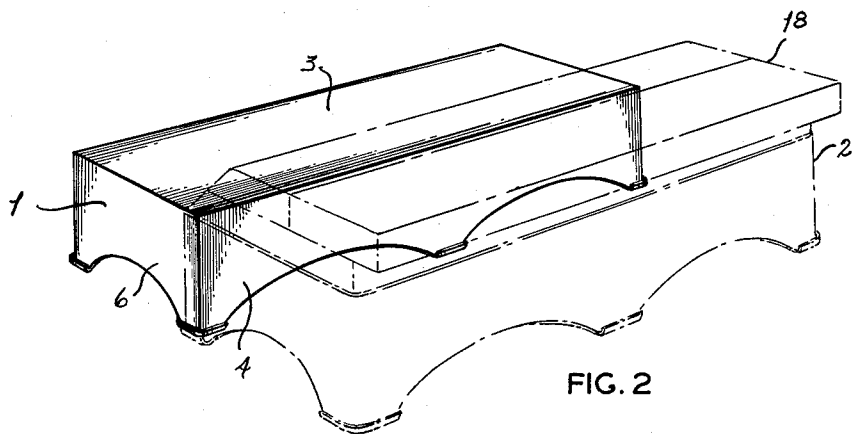


FIG. 2

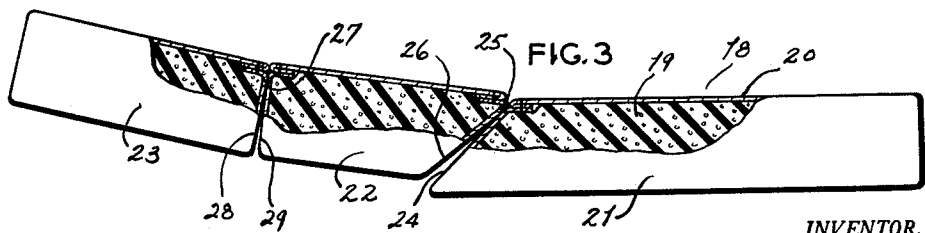


FIG. 3

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2 Sheets-Sheet 2

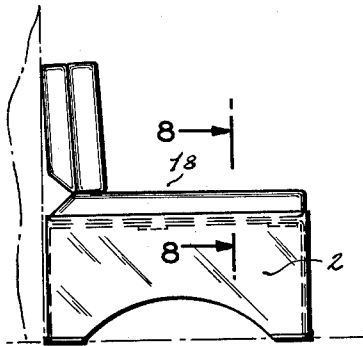


FIG. 4

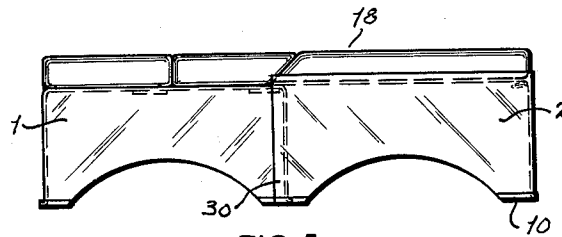


FIG. 5

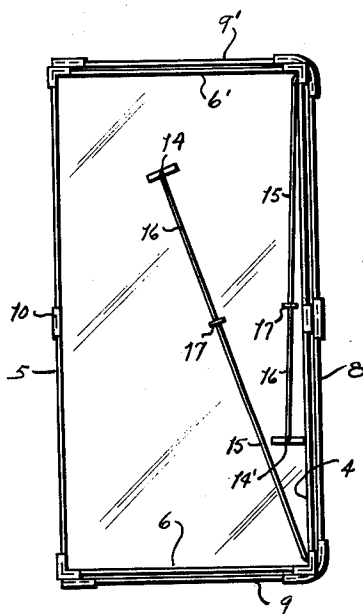


FIG. 6

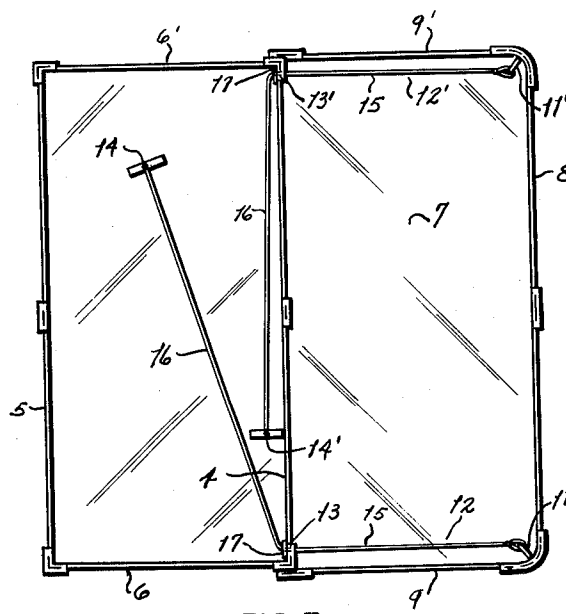


FIG. 7

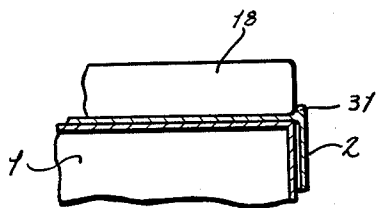


FIG. 8

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3,960,460

CONVERTIBLE COUCH

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2 Claims. (Cl. 5—18)

This invention relates in general to furniture and, more particularly, to a dual purpose article adapted for ready convertibility into a couch or a bed.

It is an object of the present invention to provide a convertible article of furniture having cooperable telescoping members adapted for forming a double bed when extended and a couch or single bed when in contracted relation.

It is another object of the present invention to provide a couch which may be converted into a double bed and which is of lightweight, simple construction, so that the same may be easily handled by the average housewife.

It is a further object of the present invention to provide a convertible couch which incorporates a unitary mattress having a plurality of hinged sections so designed that when said sections are disposed in side by side relation for double bed purposes, no uncomfortable center seam is presented; said mattress being adapted for unique relative folding of the sections for couch or sitting purposes.

It is an additional object of the present invention to provide a couch of the general character stated having a marked simplicity of parts, being devoid of the customary linkage, springs, and like mechanical parts of constructions so widely used heretofore in connection with convertible couches; which may be most economically manufactured as the cooperating telescoping members may be produced from synthetic materials and are hence amenable to high volume, molded construction; and which is most durable and reliable in usage.

Other objects and details of the invention will be apparent from the following description, when read in connection with the accompanying drawings (two sheets) wherein—

FIGURE 1 is a perspective view of a convertible couch constructed in accordance with and embodying the present invention and illustrating the same in couch or sitting condition.

FIGURE 2 is a perspective view of the article in expanded or bed position, showing the mattress prior to full extension showing the upper base member in phantom lines as in extended position with the mattress thus being presented in folded condition.

FIGURE 3 is an end view, in partial section, of the mattress approaching fully extended position.

FIGURE 4 is an end view of the couch shown in FIGURE 1.

FIGURE 5 is an end view of the article in extended or bed position.

FIGURE 6 is a bottom plan view of the couch as shown in FIGURE 1.

FIGURE 7 is a bottom plan view of the article in bed position, as shown in FIGURE 5.

FIGURE 8 is an enlarged, fragmentary vertical transverse section taken on the line 8—8 of FIGURE 4.

Referring now by reference characters to the drawing which illustrates the preferred embodiment of the present

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invention, A broadly designates a convertible couch equally adapted for sitting purposes or for providing a double bed, which comprises a pair of cooperable, normally lower and upper base members 1, 2, respectively, in telescoping relationship; each being preferably of molded construction, formed from any suitable synthetic material but, particularly, glass reinforced plastics, as the same have been found to possess properties desirable for the present invention, such as, especially, durability, damage-resistance, easy cleanability, as well as providing the firmness or rigidity requisite for proper, healthful body support. Lower base member 1 has a general design of what might be termed an "open-bottomed box," having a top wall 3, front and back side walls 4, 5, respectively, and parallel end walls 6, 6'. Upper base member 2, which is adapted to normally rest upon lower base member 1 and to be slideable toward and away from the same, comprises a top wall 7, a front wall 8, and parallel end walls 9, 9'; said member 2 being thus open at its back or rearward side and at its bottom for encasingly fitting upon lower base member 1, as may thus be seen in FIGURE 6. Thus, upper base member 2 is of actually slightly less height and of slightly increased length and width relative to lower base member 1 for snug disposition upon the latter so that when couch A is in sitting or contracted position base member 1 will be substantially obscured. However, the height differential between base members 1, 2 is at a minimum so that when said sections are in extended position the top walls 3, 7 will be in substantial planar alignment. Said base members 1, 2 may be contoured along their bottom edges in any preferred artistic manner to define foot portions, as at 10, for enhancing the esthetic, light-weight appearance of couch A.

In order to expand couch A into bed-forming position, base member 2 is withdrawn or pulled away from base member 1, being thereby brought into supported disposition upon a floor, to present a continuous mattress support surface comprised of the respective top walls 3, 7 which are thereby represented in side by side relationship; there being a narrow, overlapping portion, as at 30, to avoid developing of any parting or separation between said members 1, 2 (see FIGURES 5 and 7). To limit the withdrawing or outward movement of base member 2 for assuring the desired overlap at 30, there is provided a cable system which will now be described: Referring to FIGURES 6 and 7, it will be seen that in the upper, inner, forward corners of upper base member 2 there are provided points of securement, such as a ring, or the like, 11, 11', for one end of a cable 12, 12', respectively, which latter extends through openings 13, 13', respectively, formed in the upper, outer portions of the front wall 4 of lower base member 1, and are thence directed across the under surface of top wall 3 of base member 1 for securement at their opposite ends at points 14, 14', respectively, proximate the remote end wall of said base member 1. Cables 12, 12', being fixedly engaged at their ends, are each comprised of two components 15, 16, the former being relatively non-extensible, such as string, and the other being extensible, such as rubber, or the like; there being an enlarged collar 17 having a greater cross section than openings 13, 13' secured preferably, but not necessarily, at the point of junction between said cable components, to serve as a detent for preventing over-

extension of the extensible components 16 and thereby controlling the outer limits of expansion of said couch A, assuring that members 1, 2 will not become detached but will remain together with the desired degree of overlap, as at 30.

It is recognized that various means other than the cable system shown might be used for mutually engaging said base members 1, 2, and permitting of relative contracting and expanding movement thereof without departing from the scope of this invention. Thus, said system is presented for illustration purposes only and for the additional reason that the same does provide a means which is easily applied and operates most reliably.

Hence, in order to expand couch A it is merely necessary for the user to grasp upper base member 2 at any convenient points, such as between legs 10, and then pull forwardly or away from base member 1 until restrained by abutment of collars 17 against the inner face of front wall 4 of base member 1, whereby couch A is fully expanded into a double bed. The retracting or reverse movement for restoring the couch to its normal sitting position is effected by the corresponding operation, that being merely to slide base member 1 toward and coveringly upon base member 2. Due to the relatively light weight construction of members 1, 2, the extension and retraction operations are easily accomplished and fully within the capability of the average housewife without requiring the exercise of any strain.

Provided for disposition upon couch A is a multi-sectioned mattress 18, being formed of foam rubber, or like substance, indicated at 19, and having a suitable fabric cover 20. Mattress 18 comprises a seat or major section 21 disposed upon top wall 7 of upper base member 2 and being of like extent, and a pair of relatively smaller back or companion sections 22, 23. Said seat section 21 along its rearward longitudinal side is downwardly and rearwardly inclined, as at 24, and along its upper, rearward edge, throughout the extent thereof, is secured to the normally lower, forward edge portion of section 22 by means of a flexible hinge-forming element 25, as of fabric, being stitched or otherwise secured along its sides to the adjacent portions of the cover 20 on said sections 21, 22. Section 22 is of generally rectangular construction, but its normally lower wall portion is upwardly and rearwardly inclined, as at 26, at an angle supplementary to the angle of inclination of wall portion 24 of seat section 21 so that when said section 22 is swung into planar aligned relation with seat section 21 for bed-forming purposes, said inclined wall portions 24, 26 will be brought into snug abutting relation with section 21, thus providing a support for said section 22 throughout the region of engagement. Of especial noteworthy is the fact that by means of the novel construction, there will be no line of parting or discomforting ridge between said sections 21, 22 when the same are in bedforming position, as is customary with structures heretofore known. Said section 22 is engaged to companion section 23 along the normally forward edge of its upper wall portion as by means of a flexible hinge member 27, being similar to hinge 25. Mattress sections 22, 23 are of the same thickness and length as section 21 so that when in extended position they will unite to form a mattress of consistent thickness and appropriately dimensioned for fully covering the support surface provided by top walls 3, 7. Thus, mattress 18 is an integrated, single unit having a pair of hinges so that the sections 21, 22, 23 thereof may be readily manipulated with respect to each other, without danger of any inadvertent misalignment.

As shown in FIGURES 1 and 4, with couch A in position for sitting use, mattress sections 22, 23 will be disposed in mutually, planar parallel relation and in generally planar normal relation to major section 21, with section 23 being presented forwardly of section 22, and with the same thus providing a double thickness, as it were, to

present a comfortable back support. Hinge 27, being directed upwardly, thus serves to hide the division between sections 22, 23, so as to enhance the artistic appearance of the device and give the initial impression that the thick back support is comprised of a single unit.

When it is desired to expand mattress 18 into bed formation, prior to extension of upper base member 2, section 23 is lifted upwardly, swinging about hinge 27, for bringing its normally upper wall 28 into abutment against the normally upper wall 29 of section 22 whereupon the now engaged sections 22, 23 are, unitarily, pulled forwardly, swinging about hinge 25, until the same are disposed on section 21 (FIGURE 2). With mattress 18 in this position, the user will then pull base member 2 outwardly for expanding couch A, as above described, whereupon said sections 22, 23 are then reversely swung, as a unit, backwardly, about hinge 25 into flatwise disposition upon the upper surface 3 of lower base member 1 (FIGURE 5). In this position mattress 18 presents a continuous comfortable, body supporting member whose upper surface is unbroken by any unsightly and discomforting ridges, and the like. Obviously, upon termination of the use of couch A as a bed, mattress 18 is handled in a reverse manner for restoration to sitting position, with sections 22, 23 being thus swung about hinges 25, 27 for bringing the rear face of section 23 against the forward face of section 22, and with both being in upright relation to section 21.

Upper base member 2 may be provided along the periphery of top wall 7 with an upwardly projecting head or edging as indicated at 21 (FIGURE 8) to provide a mattress retaining rim to thus avoid any undesirable, accidental shifting or sliding of mattress 18 thereon.

Thus, in view of the foregoing, it will be seen that the present invention provides a most economically produced convertible couch which is readily manipulated for presentation for use either for sitting or reclining purposes, and which incorporates a mattress of unique construction, designed for easy handling and assuring maximum comfort, being devoid of any ridge or space developments between the sections thereof.

It should be understood that changes and modifications in the formation, construction, arrangement, and combination of the several parts of the convertible couch may be made and substituted for these herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A convertible couch comprising upper and lower base members disposed in telescoping relationship for disposition between contracted and expanded positions, said lower member having a top wall, depending parallel side and end walls, said upper member having a top wall, a depending front side wall, and parallel end walls, said upper member being slightly wider and longer than said lower base member for telescopingly and obscuringly receiving the latter when said members are in contracted relation, and means for engaging said base members to each other comprising a pair of extensible cables, each cable being engaged at its forward end to the inner portion of said upper base member and extending through an opening in said lower base member, the rearward ends of said cables being fixed to the inner portion of said lower base member, and a collar engaged on each cable within the lower base member and having a greater cross section than said openings for limiting the movement of said cables therethrough and hence controlling the extension movement of said base members.

2. A convertible couch comprising upper and lower base members disposed in telescoping relationship for disposition between contracted and expanded positions, said lower member having a top wall, depending parallel side and end walls, said upper member having a top wall, a depending front side wall, and parallel end walls, said

upper member being slightly wider and longer than said lower base member for telescopingly and obscuringly receiving the latter when said members are in contracted relation, and means for engaging said base members to each other, comprising a pair of cable elements, each such element having an extensible or resilient portion and a substantially non-extensible portion, each of said cables being engaged at one of their ends to the front portion of said upper base member at horizontally spaced apart points and each of said cable elements being engaged at their opposite end to the under surface of the top portion of said lower base member, and means for limiting the extensibility of said cables for controlling the relative movement of said base members.

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