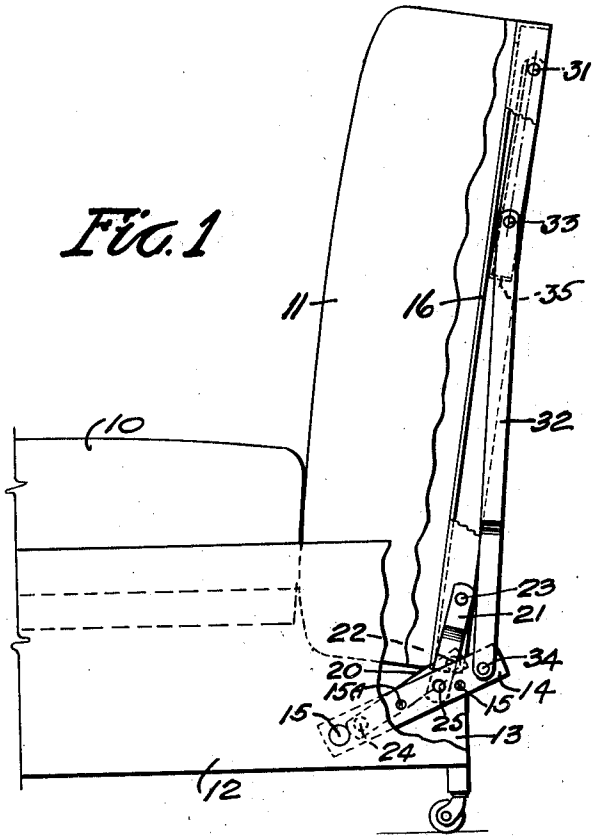
June 13, 1939. D. R. GUNN, JR 2,162,503

STUDIO COUCH

Filed May 5, 1938

FIG. 1



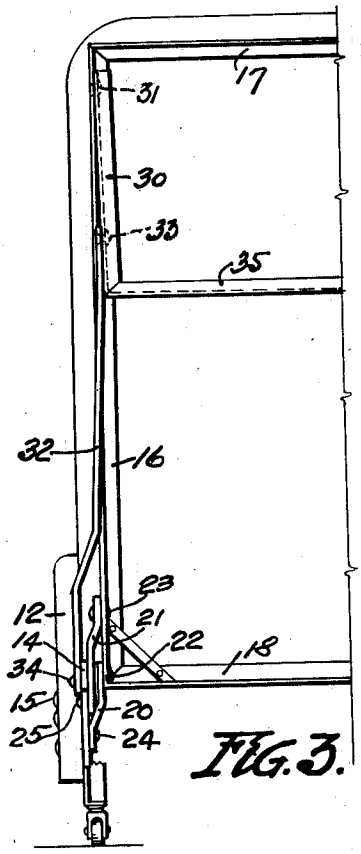
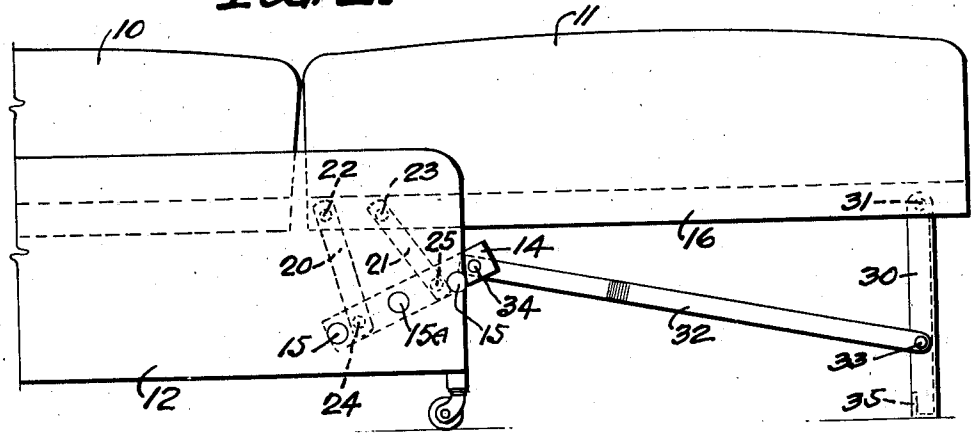


FIG. 3.

FIG. 2.



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STUDIO COUCH

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Application May 5, 1938, Serial No. 206,166

6 Claims. (Cl. 5—38)

This invention relates to an article of furniture usable either as a divan or as a bed, and in which the section which serves as a back for the divan may be turned down into horizontal position and form, with the seat section of the divan, a bed.

Such articles of furniture have been in use for many years, but difficulty has existed throughout these years in making a back which is of a width sufficient to properly serve as a bed section and yet when used as a divan back not be of such excessive height as to destroy the appearance of the divan as an article of living room furniture. Many attempts have been made to solve this problem, as by increasing the width of the seat section to such an extent that when a narrow back section is added, a bed of sufficient width is accomplished, but since there inherently must be a dividing line between the sections, such attempts have resulted in two bed sections of unequal width which is undesirable. Further attempts have been made to solve the problem by making the back section of proper depth or width and allowing the excess width, over that necessary or desired when the article is used as a divan, to extend below the seat surface, so that in divan use it is not observable and yet the width is available for bed purposes when so desired. To make a satisfactory divan of two such sections it is necessary that the back abut closely against the back edge of the seat and when these parts are shifted into bed position that the back edge of the seat section and the front edge of the back section shall likewise abut and that their upper surfaces shall be brought level the one with the other. The motions involved in making the shift are complex, it being necessary to separate the sections to permit the back section to be turned to horizontal position and to hold the surface of the back section level with the seat section surface, or during the movement to so shift the elevation of the back section surface as to accomplish its proper alinement with the seat section surface and, at the close of these movements, have the side edges of the two sections in abutting relation.

So far as is known all such attempts have involved the sliding movement of one or both of the sections, first to separate them and later to bring them together, such sliding movements requiring a structure which is either initially loosely connected or which rapidly becomes so under the ordinary conditions of use, and particularly during divan use, is objectionably unstable.

The objects of the present invention are primarily to make a hinged structure for the connection and coordination of the movement of the back section which is inherently stable initially, and is so constructed as to remain so during substantially the ordinary life of such article.

To make a connecting structure in which connections of the sections is accomplished entirely by hinge or pivot means.

To make a connecting construction which solidly supports the back section in both divan use and bed use; and

To make such structure with a minimum number and a simple arrangement of the connecting parts.

The means by which the foregoing and other objects are accomplished, and the manner of their accomplishment will readily be understood from the following specification on reference to the accompanying drawing in which the various parts are indicated by numerals.

Fig. 1 is an end elevation of the back section and a portion of the seat section, with parts broken away to show the hinged members by which connection of the back section to the balance of the structure is made.

Fig. 2 is an end elevation showing the back section turned into position for use as a bed; and

Fig. 3 is a fragmentary rear elevation with the back section in divan position.

Referring now to the drawing in which the various parts are indicated by numerals:

10 is the seat section, and 11 the back section. 12 is a frame member at one end of the structure, and 13 a similar frame member at the opposite end, these being a part of a box structure of usual type supporting the bed section 10 and ordinarily being of wood. 14 is a metal plate secured to the frame member 12 as by bolts 15, 15—A, this member being used to assemble and coordinate linkage parts and to reinforce the frame member 12 and form a more efficient support for the pivot pins, to be hereinafter mentioned, than would be afforded by an all wood member, it being understood, however, that should the end member be of metal or a much cheaper wooden construction be desired, such plate could be entirely dispensed with. 16, 17 and 18 are members as of angle iron which, with an additional end member not shown, form a frame to carry the back section 11, it being readily understood that the additional member, similar to the member 16, is at the opposite end of the section. 20 and 21 are a pair of arms which are connected at their respective ends by pivot pins 22 and 23 to the frame member 16 and by pins 24 and 25 to the metal

plate 14, these arms and similar linkage at the opposite end forming a hinged support for the lower edge of the back section, about which the section is turned when the back is shifted from upright to horizontal position, or vice versa. 30 is a leg pivotally connected by a pin 31 to the end member 16, 32 a link connected by a pin 33 to the leg 30 and by a pin 34 to the plate 14, a similar leg and link, not shown, are at the opposite end of the section, the legs being preferably connected by a transverse bar 35.

It will be obvious that the relative lengths of the arms 20 and 21 may be varied, but such lengths must be so related to the spacing of the centers 22 and 23 along the frame members 16, the spacing and angle of the center 24, 25 along the plate 14 and the angular disposition of the plate 14 with reference to a horizontal line that the member 16 will be horizontally disposed in bed position of the back, and properly inclined from the vertical in upright position.

It is further advisable to make the length of the arm 20 between centers plus the distance between the centers 22 and 23 slightly less than the length of the arm 21 between centers plus the distance between the centers 24 and 25 in order that the arm 20 may not pass dead center and that its motion be forward and upward, though such prevention of undesired movement of the arm 20 may be otherwise accomplished as by lowering the bolt 15 and allowing it to project into the path of the arm.

In use (confining the description for clearness to one end) with the back section 11 in upright position the pin 33 has a position out of the line of the centers 31 and 34 and holds the leg 30 against the frame member 16, effectually locking and bracing the back in such upright position. To change to bed position the cross bar 35 is pulled outward, that is away from the frame member 16, pulling the pin 33 past dead center and releasing the back lock, allowing the back to be swung downward to the horizontal position shown in Fig. 2.

In accomplishing this movement the arm 21 swings backward about the pin 25 as a center until the pins 24, 22 and 23 are in substantial alinement, there being, during such movement, an almost imperceptible upward and forward movement of the arm 20. As the pin 22 lines up between the pins 23 and 24 the upper end of the arm 20 begins a rapid upward and forward movement, and the arm 21 begins a similar forward movement which continues until the frame member 16 which carries the pins 22 and 23 reaches a horizontal position and is checked and supported at its outer end by the leg 30, this leg having been swung out during such movement to a vertical position by the links 33.

It will be particularly noted that the movement of the pin 23 is first backward, that is, away from the seat section 10, and then forward toward this seat section, and that the original turning movement of the back is about the pins 20 and 22, both of which are below the bottom of the seat section 10, so that the movement of the back section is away from the seat section, so separating the sections that the subsequent movements may be accomplished.

It will be further noted that the support for the back section 11, when used as a bed, is on arms 20 and 21 which are substantially at its forward edge and inclined toward the bed section 10, and that at its outer edge the back section is at such time supported by legs rigidly braced by links 32 from the frames 12, 13, there being thus no possibility of tipping or collapsing action of the back section when so used or under any conditions of load.

To return the back section from bed position to back position, its outer edge is merely lifted about its pivotal supports until it approaches upright position after which the cross bar 35 is grasped and the legs 30 pushed forward into locking position.

I claim:

1. A studio couch including a frame, a stationary seat section supported by the frame with its rear side spaced from the rear side of the frame, a back section, means to connect the back section to the frame for movement to vertical and horizontal positions with respect to but independent of said seat section, said connecting means including spaced pairs of links each having one of their ends connected to the frame below the plane of the seat section and their opposite ends connected to the adjacent portion of the back section below the plane of the seat section and being disposed, whereby when the back section is moved to a vertical position a portion thereof will be positioned below and in engagement with the rear side of the seat section, and when the back section is moved to a horizontal position its then front side will be moved against and held engaged with the rear side of the seat section through the medium of the connecting means.

2. A studio couch including a frame, a stationary seat section supported by the frame with its rear side spaced from the rear side of the frame, a back section, means to connect the back section to the frame for movement to vertical and horizontal positions with respect to but independent of said seat section, said connecting means including spaced pairs of links each having one of their ends connected to the frame and their opposite ends connected to the adjacent portion of the back section and being disposed, whereby when the back section is moved to a vertical position a portion thereof will be positioned below and in engagement with the rear side of the seat section, and when the back section is moved to a horizontal position its then front side will be moved against and held engaged with the rear side of the seat section through the medium of the connecting means.

3. A studio couch including a frame, a stationary seat section supported by the frame with its rear side spaced from the rear side of the frame, a mounting member secured to each end of the frame and having a part extending beyond the rear side of the frame, a back section, links pivotally connected to each of the ends of the back section and to the respective mounting member for movement to vertical and horizontal positions with respect to but independent of said seat section, a supporting member movably connected to the back section, and means connected to the supporting member and to each of the respective rearwardly extending ends of the mounting member, said connecting means between the back section and the mounting members being disposed, whereby when the back section is moved to a vertical position a portion thereof will be positioned below and in engagement with the rear side of the seat section, and when the back section is moved to a horizontal position its then front side will be moved against and held engaged with the rear side of the seat section

through the medium of said first named connecting means.

4. A studio couch in accordance with claim 3, wherein the second named connecting means comprise links pivotally connected to the mounting member.

5. A couch including a frame, a stationary seat section supported by the frame with its rear side spaced from the rear side of the frame, a pivotal mounting member secured to each end of the frame and having an extending part terminating beyond the rear side of the frame, a back section, a pair of spaced links at and pivotally connected to each end of the back section and to the respective pivotal mounting member for movement of the back section to vertical and horizontal positions with respect to but independent of the seat section, a supporting member pivotally connected to the upper portion of the back section, and means connecting each end of the supporting member and the extending part of the respective pivotal mounting member, said pairs of links being disposed whereby when the back section is moved to a vertical position a portion thereof will be positioned below and in engagement with the rear side of the seat section, and when the back section is moved to a horizontal position its then front side will be moved against and held engaged with the rear side of the seat section through the medium of said pairs of links.

6. A couch including a frame, a stationary seat section mounted on the frame and having its rear side terminating spaced from the rear side of said frame, a back section, means to connect the back section to the rear portion of said frame for movement to vertical and horizontal positions with respect to but independent of said seat section, said connecting means including spaced pairs of links each having their lower ends connected to the frame and their upper ends connected to the adjacent portion of the back section, whereby when the back is moved to its vertical position said links will extend toward the rear of the frame and the lower portion of the back section will be disposed below the seat section and in engagement with the latter, and when the back section is moved to its horizontal position the links will extend toward the front of the frame so that the then front side of the back section will move toward and be held engaged with the rear side of the seat section with its upper surface flush with the upper surface of the seat section.

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