March 6, 1945. J. F. EPPENSTEIN 2,370,851

COUCH-BED

Filed March 8, 1943

Fig. 1

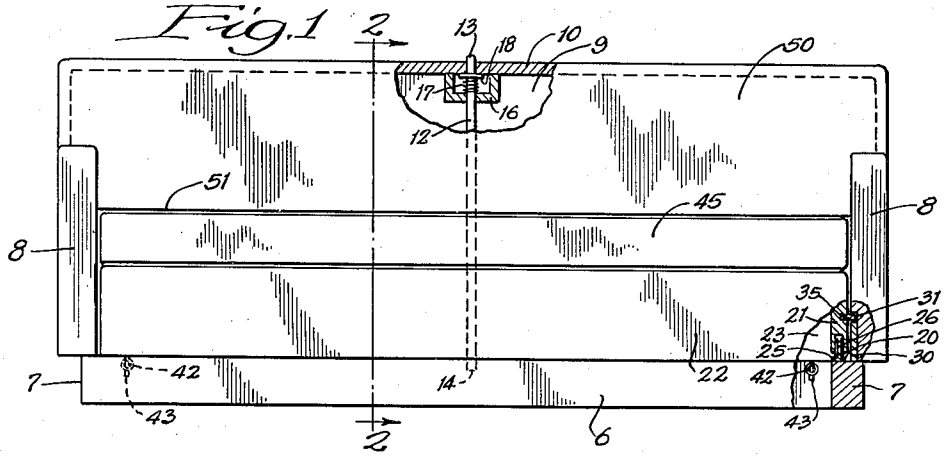


Fig. 2

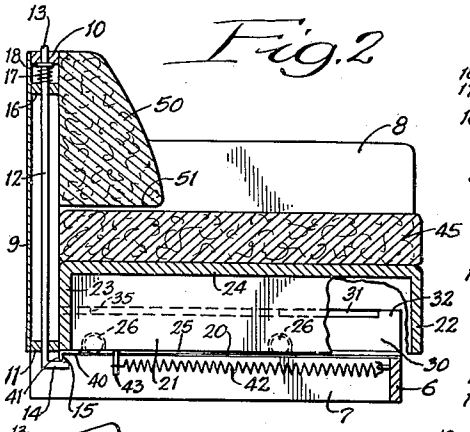


Fig. 3

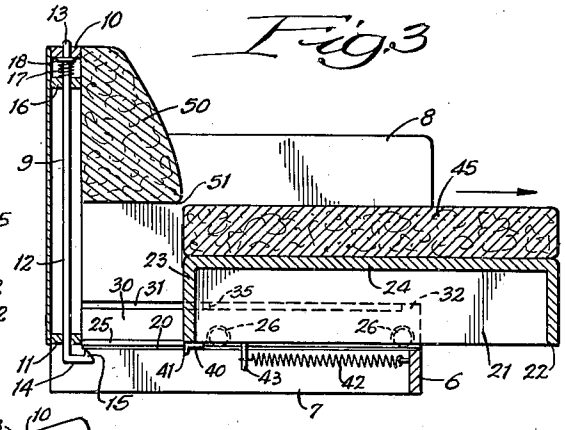


Fig. 4

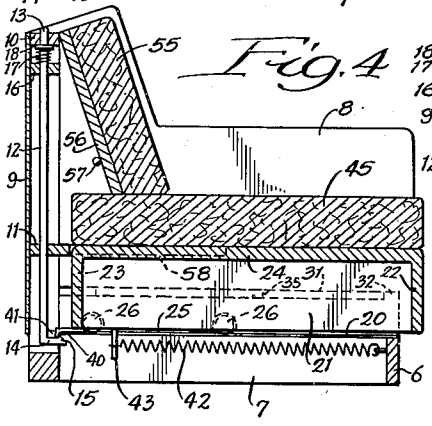
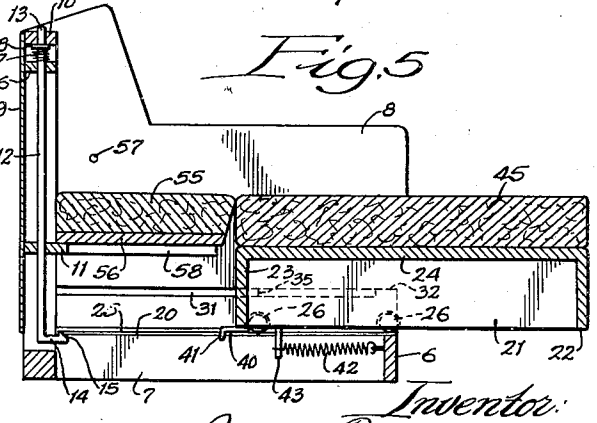


Fig. 5



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2,370,851

COUCH BED

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Application March 8, 1943, Serial No. 478,346

2 Claims. (Cl. 5—18)

This invention relates to a couch-bed, i. e., a couch which is convertible into a bed for sleeping purposes. In particular, the present improvements are concerned with features contributing to simplicity of construction, ease of operation, and dependability of the operating parts.

For its objects, my invention aims to provide an effective sliding mounting of a bed within the couch frame such that relative movement in one direction will be in response to tension means, and in the other with a minimum of effort; a simple form of latch the release of which may be conveniently effected; means by which the bed, when outwardly slid to an overhanging position relative to the ways on which it is mounted, will be adequately supported whereby to sustain at any point the load that is imposed thereon; and generally the arrangement and utilization of operating parts which are simple, durable and effective for the intended purposes.

A suggestive embodiment of my invention is set forth in the accompanying drawing, wherein—

Figure 1 is a front elevation of the present couch-bed with portions of the back cushion and one end of the front broken away to exhibit (*a*) the latch release control and (*b*) the bed mounting on one of the ways;

Fig. 2 is a transverse section through the couch-bed taken on line 2—2 of Fig. 1;

Fig. 3, which is a view similar to Fig. 2, shows the bed slid outwardly to sleeping position;

Fig. 4, which is a view similar to Fig. 2, shows a modified construction of couch for association therewith of a double bed; and

Fig. 5 is a view similar to Fig. 4, showing the double bed extending out, ready for use.

As herein shown, I utilize a base comprising a front piece 6 joined to end pieces 7 which are inset with respect to the couch ends 8 having a connecting back 9 therebetween. Built into the couch back are upper and lower bracing boards 10 and 11, respectively, and extending therethrough is a slidable operating rod 12, the top end 13 of which is exposed for manipulation. The lower end of this rod is turned laterally forwardly at 14 and terminates in an upstanding beveled hook 15. Below the top board 10 is fashioned a strap 16 of wood or the like forming a thrust bearing for the lower end of a coil spring 17 whose upper end is in engagement with a collar 18 that is fixedly carried on the rod. In response to tension of the spring the rod is normally maintained in an up position where its top end 13 is in a position convenient for manipulation, the collar 18 engaging with the top board to limit the rod movement in this direction. In response to down pressure upon the end of the rod, the spring will be compressed, and subsequently, upon relaxation of such pressure, the spring will act to restore the rod once more to its upper position.

The end pieces 7 of the base are inset with respect to the couch frame ends so as to present top surfaces 20 which lie to the inside thereof. These top surfaces constitute ways whereon is slidably mounted a bed here shown as comprising a frame in the form of a box with ends 21, a front 22, a back 23, and a top 24. If desired, a rail 25 may be supported on each way to receive thereon rollers 26 each of which is mounted to rotate about a fixed axis finding support in the end board of the bed frame. Two such rollers are shown in each end of the bed frame whereby to minimize the friction occasioned by in and out sliding movements of the bed relative to the couch frame.

So that the bed frame may be confined to movements in a horizontal plane, appropriate guiding means are provided. For this purpose the inner face of each end may be recessed across its lower portion where a board 30 is mounted therein, the top edge of the board being spaced slightly from the overhanging shoulder formed by the recess whereby to provide therewith a guideway 31. This guideway which extends forwardly from a point close to the back for nearly the full width of the end, is terminated by a shoulder 32 which upstands from the forward end of the board 30. Affixed to each end of the bed frame is a tongue 35 which fits slidingly into the proximate guideway, the length of the tongue being such as to permit outward movement of the bed for a desired distance. This movement is arrested when the end of the tongue abuts the shoulder 32 of the board 30. It will thus be observed that the bed is confined to straight-line movements in a horizontal plane, and even when advanced outwardly to an overhanging position relative to the front of the couch frame, is adequately supported so that a substantial weight may be safely sustained upon its forward edge.

Affixed to the underside of the bed frame at a point opposite the hook 15 is a fitting 40 having a depending lip 41 with which this hook is adapted to engage. The forward face of the hook is beveled so that when the bed is advanced inwardly to its limit this lip will ride up on the hook which, after first depressing, will again ascend to lock with the fitting 40 whereby to releasably latch the

bed in place. It is desirable, also, to employ a pair of tension springs 42, one near each end of the bed, and each connected at its forward end to the base front 7 and at its rearward end to an arm 43 which depends from the base frame. These springs are tensioned so as to exert a force which urges the bed to advance outwardly from the couch following release of the latch.

Carried upon the top of the bed frame is a mattress 45 which serves as a cushion for normal lounging use. When the bed is fully retracted, its rear board 23 will engage the bottom brace board 11 which acts as a stop therefor, and the mattress which extends for the full width of the bed is then positioned along its rear edge close to the back of the couch frame. The mattress is, of course, free to move with the bed frame and normally advances therewith in each operation thereof.

According to the showing of Figs. 2 and 3, the couch frame is provided with a back cushion 50 which is desirably extended for the full length of the couch. This cushion, as shown, is substantially flush with the top board 9 and from this point downwardly is inclined outwardly so that the bottom 51 of the cushion has an increased span. The cushion bottom terminates just above the top of the mattress, the space therebetween being desirably the minimum. The mattress is free to move in under the cushion as shown in Fig. 2. The range of outward movement of the bed is desirably about equal to the span of the cushion along its bottom, so that when fully extended as shown in Fig. 3, the rear edge of the mattress will lie about opposite the extreme forward point of the rear cushion.

For the double bed construction, shown in Figs. 4 and 5, the operating parts are the same and consequently bear corresponding reference characters. In one respect only is there any change and that is in the mounting of the back cushion for the couch. In this case the cushion, designated as 55, may be built on to a back board 56 and in lounging use is rested upon the mattress in an inclined position about as determined by supporting pins 57 which extend inwardly from each end of the couch. For sleeping use, however, this cushion is moved from the position of Fig. 4 to the horizontal position of Fig. 5 where it lies flush with the bed mattress, being then rested upon the back board 11 and a pair of ledges 58 which are carried upon the inside faces of the couch ends. When the span of the cushion is added to that of the mattress, a full double width bed is provided.

In this couch-bed use of ordinary fittings and metal parts is reduced to a minimum. The frame boards of the couch and of the bed are largely of wood, each being covered or upholstered in accordance with dictates of good taste. To convert from a couch to a bed, nothing need be done beyond pressing the rod end 13—the bed will then advance outwardly in response to tension of the springs and stop at the pre-arranged point. To convert back to a couch, pressure from the hands or knees is all that is required for return to its initial position where the bed is automatically locked, awaiting the next call for its conversion.

I claim:

1. In a couch-bed, a couch frame providing a back and ends, a base underlying each end and having end pieces inset relative to said ends to provide two ways inside thereof, a bed frame extending between the couch ends and slidably mounted on the two ways for inward and outward movements of the bed frame relative to the couch frame, and relatively slidable interlocking means on each end of the bed frame and couch frame and located above and spaced from said ways and arranged to confine movements of the bed frame to a horizontal plane and limiting the outward movement of the bed frame and cooperating with said ways to support the bed frame when the latter is advanced to an overhanging position beyond the front end of the ways.

2. In a couch-bed, a couch frame providing a back and ends all in rigid relation to each other, a pair of spaced ways extending from front to back of the couch frame, one near each end thereof, a bed frame extending between the couch ends for substantially the width thereof and slidably mounted on the two ways for movement forwardly of the ways beyond the front ends thereof, a mattress carried by the bed frame for movement therewith, a cushion carried by the couch back just above the mattress whereby the latter is free to slide thereunder when the bed frame is moved to an in position, spring means connecting the bed and couch frames and exerting a force tending to advance the bed frame outwardly to a position forwardly of the couch frame, a vertically movable operating rod slidably mounted in the back of the couch frame and having an upper operating end exposed at the top of said back, said operating rod extending downwardly to the bottom portion of the couch-bed and having a laterally projecting latch member provided with a catch, a fitting carried by the bed frame and provided with a projecting lip arranged to engage with the catch of said latch member when the bed frame is moved to said in position whereby the bed frame is locked against outward movement.

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