Nov. 7, 1939. G. A. JOHNSON 2,179,152

CONVERTIBLE COUCH

Filed June 19, 1937 2 Sheets-Sheet 1

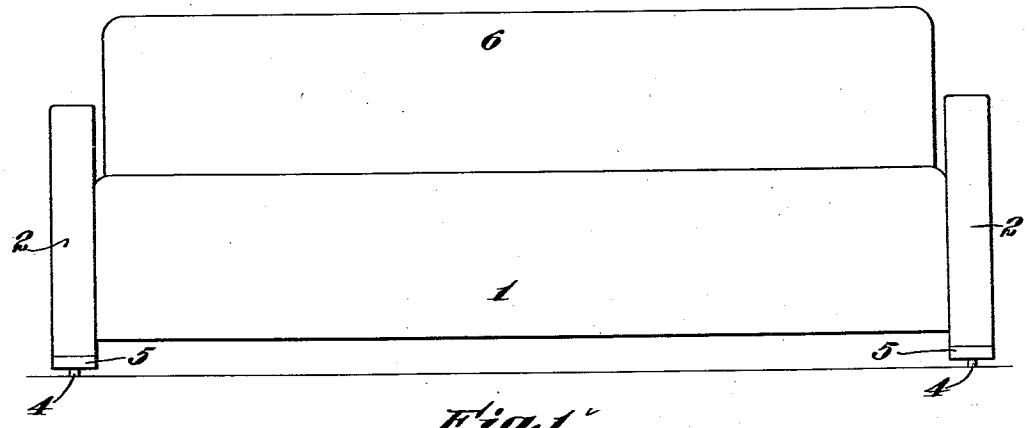


Fig. 1

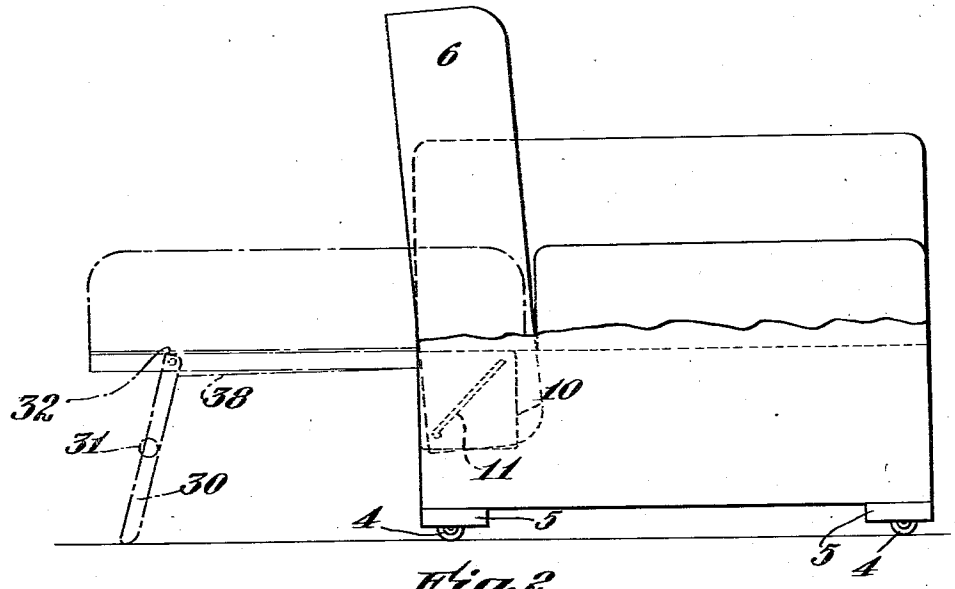


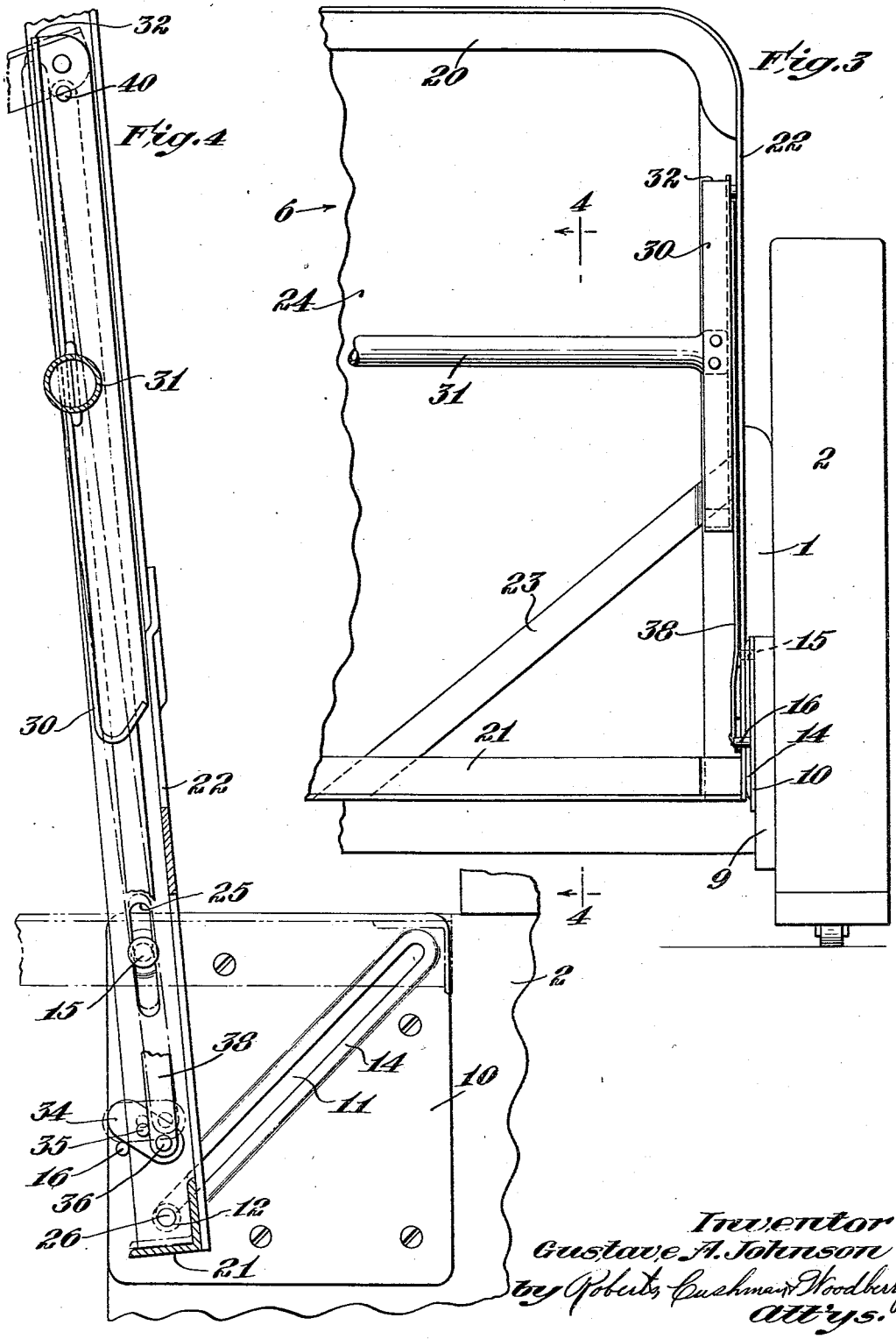
Fig. 2

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UNITED STATES PATENT OFFICE

2,179,152

CONVERTIBLE COUCH

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5 Claims. (Cl. 5—38)

This invention relates to couches and the like articles of furniture of the convertible type adapted for use, when desired, as a bed or cot.

The conventional couches comprise a supporting structure which carries a seat frame to which is attached a padded or cushioned back rest, such back rest usually being of substantially the same length as the seat frame and of a width (height) substantially the same as the front to rear width of the seat frame and cushion. While this back rest is highly desirable when the occupant of the couch is seated, it is of little value except possibly as a screen when the occupant uses the couch as a bed.

The principal objects of the invention are to provide a couch or the like article of furniture of the aforesaid type, which is so designed that the back rest may be swung downwardly by a simple manipulation of parts which are readily accessible; and to provide a convertible couch which is of pleasing and attractive appearance and wherein the operating mechanism is normally concealed, though readily accessible, and which is of strong and durable construction, embodying a minimum number of parts.

Further objects will be apparent from a consideration of the following description and accompanying drawings, wherein:

Fig. 1 is a front elevation of a couch constructed in accordance with the present invention;

Fig. 2 is a side elevation of the structure shown in Fig. 1;

Fig. 3 is an enlarged rear elevation of one end of the couch; and

Fig. 4 is an enlarged section substantially on the line 4—4 of Fig. 3.

The embodiment herein shown comprises a conventional seat structure 1 having the usual cushion on its top surface and rigid upstanding end members 2 providing arm rests, the entire structure being supported on casters 4 carried by legs 5. A cushioned back rest 6 is pivotally supported at or adjacent to the rear longitudinal edge of the seat structure so as to swing from an upright position (Figs. 1 and 2) to a substantially horizontal position, shown by the dot and dash lines in Fig. 2. Although the back rest may be of any conventional design, its length and width preferably conform to that of the seat structure so as to cooperate therewith when swung downwardly to provide twin sections which form a double bed, as indicated by the dot and dash lines of Fig. 2. In order to maintain well-balanced proportions which enhance the appearance of the couch, the lower edge of the back rest is positioned well below the seat cushion, as shown in Fig. 2, and, as hereinafter more fully described, the connections between the back rest and seat structure are such that when the back rest is swung downwardly, it is moved rearwardly relative to the seat structure and its lower edge is guided to a position contiguous to the rear edge of the seat cushion.

The inner face of each of the end members 2 adjacent to the central rear edge is provided with a block 9 (Fig. 3) to which is attached a metal plate 10 formed with a slot 11 which extends from adjacent its lower corner to adjacent its diagonally opposite corner, the lower end of the slot terminating in an offset recess 12, as shown in Fig. 4. The margins of the slot 11 are preferably pressed outwardly to form a bead 14 which not only strengthens the plate, but also provides guiding means spaced from the surface of the block 9. The upper (left hand) corner (Fig. 4) is provided with a pintle 15 and a pin 16 is provided between the pintle 15 and the lower end of the slot 11.

The back rest may be of conventional construction, having horizontal top and bottom frame members 20 and 21 (Fig. 3) and vertical end members 22 which may be of fabricated steel, such as angle-iron, suitably braced by diagonally extending members 23. The horizontal and vertical frame members are preferably disposed so as to define a shallow recess in the rear face of the back rest, in that their outer edges project beyond the rear wall 24 (Fig. 3) of the back rest. The vertical members 22 are formed with elongate slots 25 spaced from their lower ends and these slots receive the pintles 15 so as to form a pin and slot connection for pivotally securing the back rest 6 to the seat structure 1, as shown in Fig. 4. The lower ends of the frame members 22 are provided with outwardly projecting pins 26 which extend into the slots 11 in the plate 10, the parts being so constructed and arranged that when the back rest is in upright position the pins 26 are disposed in the recesses 12, thereby releasably to lock the frame members 22 in upright position. When the back rest is elevated sufficiently to withdraw the pins 26 from the recesses 12, it may be swung downwardly about the pintles 15 so that the pins 26 ride in the slots 11.

In order to effect the release of the pins 26 and provide means for supporting the back rest when swung to horizontal position, legs 30 are pivotally secured to the frame members 22 adjacent to their upper ends and a cross bar 31 is

riveted or otherwise secured to the legs 30. The opposite ends of the legs are cut or shaped to provide abutments 32 arranged to engage the frame members 22 when swung to supporting position, shown by the dot and dash lines of Fig. 2, thus limiting the outward movement of the legs. The cross bar 31 not only increases the rigidity of the structure, but also provides a handle for facilitating the release of the locking means or pins 26 in the manner presently to be described.

The lower ends of each frame member 22, at a point between the slot 25 and pin 26, is provided with a short rocker arm 34 pivoted at 35 so that its outer end engages the pin 16 and causes the back rest to be elevated when the arm is swung from an angular position (shown by the full lines in Fig. 4) to a substantially horizontal position (shown by the dot and dash lines in Fig. 4). The inner end of each arm 34 is pivotally connected at 36 to one end of a link 38 whose opposite end is pivotally connected at 40 to the adjacent leg 30.

With the construction and arrangement thus described the links 38 are drawn upwardly when the foldable legs 30 are swung outwardly, as indicated by the dot and dash lines in Fig. 4, and consequently the entire back rest is bodily elevated so that the pin 26 is withdrawn from the recess 12, thus releasing the locking action of the pin 26 and permitting the back rest to be swung downwardly. The downward movement of the back rest is facilitated by the cross bar 31 which constitutes, in effect, a handle and which is at all times readily accessible. During the downward movement of the back rest the legs 30 are naturally swung outwardly to their full extent so that they are in proper position, as indicated by the dot and dash lines of Fig. 2, when the back rest assumes a substantially horizontal position. The construction and arrangement of the slots 11, pintles 15 and pins 26 is such that as the back rest moves downwardly, it is displaced outwardly or rearwardly relative to the seat structure by the engagement of the pins 26 with the beaded edges 14, so that when it assumes a horizontal position the lower edges of the cushion carried by the back rest are contiguous to the adjacent longitudinal edges of the cushion carried by the seat structure, and the links 38 are displaced outwardly to an extent sufficient to position the legs 30 so that the abutments 32 engage the frame members 22 and hold the legs at the proper angle of inclination to support the back rest in horizontal position.

In order to reposition the back rest, it is merely necessary to lift it upwardly to an upright position (Fig. 2), and during this movement the weight of the back rest, aided by the action of gravity, is effective to reposition the links 38 and associated parts so that when the back rest is in normal upright position, the legs 30, cross bar 31, and links 38 are substantially concealed within the recess defined by the horizontal and vertical frame members 20—22.

It will be noted that in a couch constructed in accordance with the present invention the weight of the back rest is effective to maintain the pin 26 in locking position, and that the same movement or manipulation required to release the locking pin is continued to swing the back rest to horizontal position. Accordingly, a simple manipulation of a single part is effective not only to release and lower the back rest, but also to swing the foldable legs to back-supporting position.

It will be further noted that when the back rest is in upright position, its lower edge is concealed and hence its effective width is reduced to an extent sufficient to maintain balanced proportions comparable to couches of the non-convertible type. Moreover, the operating parts are substantially concealed and hence do not detract from the appearance of the couch, and when the back rest is in horizontal position the only parts exposed to view are the legs, cross bar and a part of the lower edge of the links 38.

While I have shown and described one desirable embodiment of the invention, it is to be understood that this disclosure is for the purpose of illustration, and that various changes in shape, proportion and arrangement of parts, as well as the substitution of equivalent elements for those herein shown and described, may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

I claim:

1. An article of furniture comprising a seat structure having adjacent to each end guiding means and a fixed abutment, a back rest pivotally and slidably mounted on said seat structure so as to be swung to a horizontal position, said back rest having guiding means cooperating with those of said seat structure and arranged releasably to hold said back rest in upright position, said guiding means being constructed and arranged to release said back in response to a slight upward movement relative to said seat structure so as to permit said back rest to be swung downwardly to horizontal position, foldable legs carried by said back rest and operative when extended to support the back rest in horizontal position when swung downwardly, and means including links connecting the legs and back rest and engageable with said abutments and operative to move said back rest upwardly when said legs are extended, thereby to release said guiding means and permit the back rest to be swung to horizontal position.

2. An article of furniture comprising a seat structure having slotted guide means adjacent to each end, one end of each of said guide means having an offset recess, a back rest having a pin and slot connection with said seat structure so as to swing downwardly to a substantially horizontal position, the ends of said back rest having guide pins arranged to slide in said slotted guide means and to enter the recesses so as releasably to lock the back rest in upright position, foldable legs normally positioned against the rear face of said back rest and arranged to be moved to an extended position so as to provide a support for the back rest when swung to horizontal position, and means associated with said legs and arranged to move said back rest, relative to said seat structure, when said legs are moved to extended position, thereby to effect the release of said guide pins from the recesses and permit the back rest to be swung downwardly to horizontal position.

3. An article of furniture comprising seat and back members interconnected so that the back member may be raised relative to the seat member and swung to a horizontal position, one of said members having a recessed part and the other of said members having a projection constructed and arranged to engage said recessed part when said back member is in an upright position so as to lock the back member in such position, collapsible supporting means carried by said back member, said supporting means being constructed and arranged to be moved to an erected position wherein it supports the back member

in horizontal position, and mechanism associated with said supporting means and said seat and back members for raising said back member so as to disengage said projection from said recessed part in response to movement of said supporting means to extended position, thereby to permit said back member to be swung to horizontal position.

4. An article of furniture comprising seat and back members interconnected so that the back member may be raised relative to the seat member and swung to a horizontal position, releasable locking means for holding the back member in upright position, said locking means comprising a recessed part carried by said seat structure and a locking pin carried by said back rest, said locking pin being engageable with said recessed part to hold said back rest in upright position, and foldable links associated with said seat member and back member and operative when moved outwardly from folded position to raise said back member so as to disengage said locking pin from said recessed part and operative when moved to fully extended position to support said back member in horizontal position when the latter is swung from upright position.

5. An article of furniture comprising a seat structure, an upright back rest pivotally and slidably secured to said seat structure so as to be swung downwardly to a horizontal position, releasable locking means for holding said back rest in upright position, said locking means comprising a recessed part carried by said seat structure and a locking pin carried by said back rest, said locking pin being engageable with said recessed part to hold said back rest in upright position, an abutment member carried by said seat structure and foldable links associated with said back rest and operative to support said back rest in a horizontal position when swung outwardly from folded position, said links being connected with said locking means and having a part engageable with said abutment member so that when swung outwardly said links are automatically operative to move said back rest outwardly from said seat structure sufficiently to disengage said locking pin from said recessed part.

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