

F. L. ANDREN.
BED COUCH.
APPLICATION FILED FEB. 9, 1912.

Patented Aug. 20, 1912.
2 SHEETS—SHEET 1.

1,036,172.

Fig. 1.

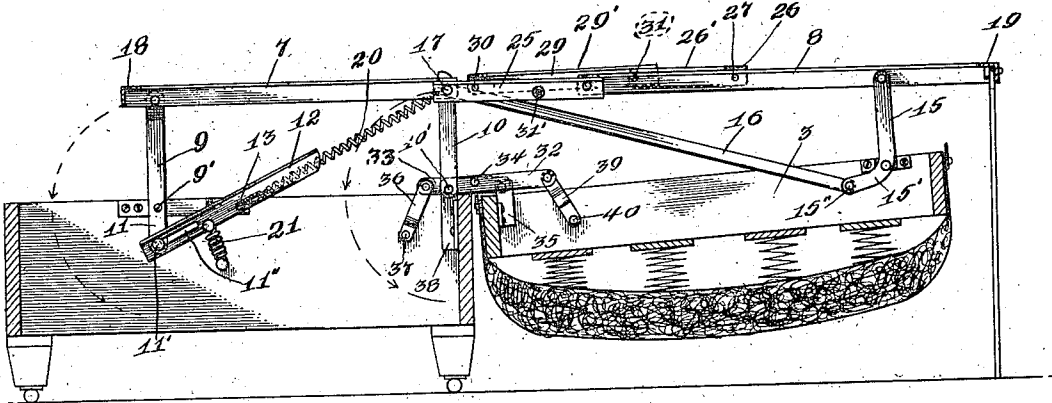


Fig. 2.

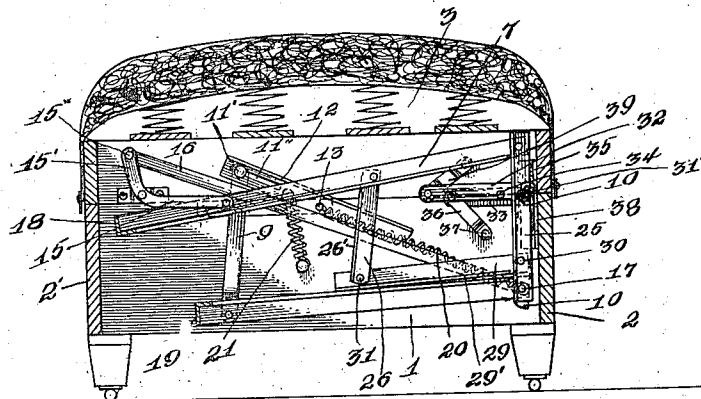
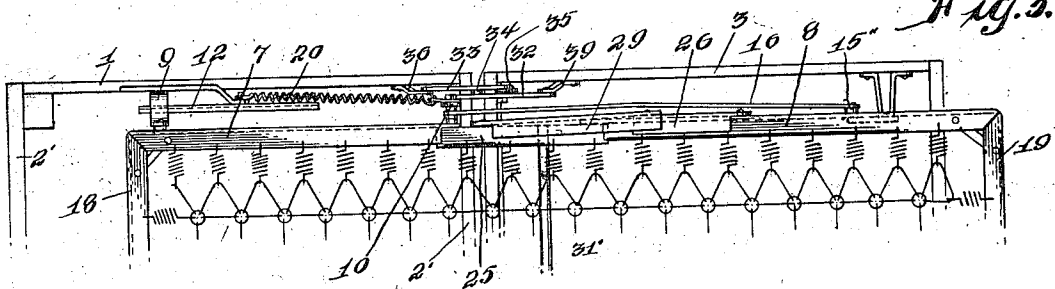


Fig. 3.



Witnesses:
Arthur Hesley.
A. S. Phillips

Inventor:
Fritz L. Andren
By Clarence Chamberlain,
Attorney.

F. L. ANDREN.
BED COUCH.
APPLICATION FILED FEB. 9, 1912.

Patented Aug. 20, 1912.
2 SHEETS—SHEET 2.

1,036,172.

Fig. 4.

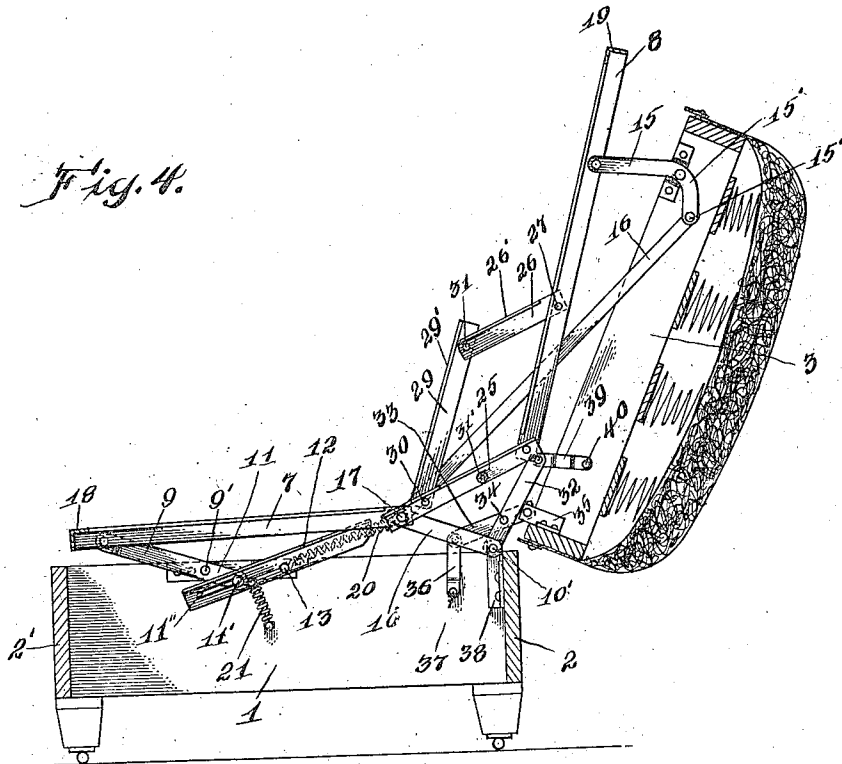
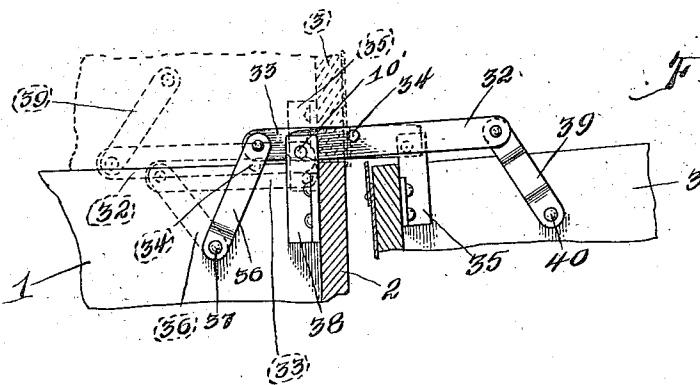


Fig. 5.



Witnesses:
Arthur D. Hays.
A. S. Phillips

Inventor:
Fritz L. Andren
By Arthur D. Hays
Attorney.

UNITED STATES PATENT OFFICE.

FRITZ L. ANDREN, OF CHICAGO, ILLINOIS.

BED-COUCH.

1,036,172.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed February 9, 1912. Serial No. 676,598.

To all whom it may concern:

Be it known that I, FRITZ L. ANDREN, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Bed-Couches, of which the following is a specification.

My invention relates to articles of furniture in which an upholstered sofa may be changed from its use as such into a bed provided with a suitable set of springs. In these devices the sofa seat may be inverted and the bed springs are concealed in the body of the sofa under the seat with a space between them to hold the mattress and bedding.

It is the object of my invention to provide a piece of furniture of this class in which the relatively movable parts are so balanced with reference to each other that they may be moved with slight effort to make the changes, and also to provide an improved device by which the top and body portions of the sofa may be hinged together and at the same time be given a smooth and uniform lateral motion while being folded or unfolded.

The principles of my invention are illustrated in the drawings, in which—

Figure 1 represents a cross section of my improved bed couch when open for use as a bed; Fig. 2 is a similar section showing the same closed for use as a couch; Fig. 3 is a top view of Fig. 1 showing the attachment of the bed springs; Fig. 4 is a view similar to Fig. 2 with the top partially opened; Fig. 5 is a detail of hinge connection.

Further describing my invention with reference to the drawings, in which like figures of reference denote like parts throughout: 1 represents one end of the body portion of a sofa and 2 and 2' the side pieces forming respectively the front and rear parts of the body. To the part 2 is pivoted a seat portion 3 by a device which will be hereafter described. The framework of the bed consists in part of end rails 7 and 8. Rail 7 is supported in the position shown in Fig. 1 by crank levers 9 and 10 which are pivoted at their upper ends to the rail and at the lower ends to the sofa body. The crank lever 9 is extended downwardly from the lower pivot to form a short arm 11 attached by means of a pivot 11' acting in the slot 11'' to the shift lever 12, which in

turn is pivoted to the sofa body at 13. The end rail 8 is pivotally attached in a manner similar to that already described by means of the crank lever 15 which has a downwardly projecting arm 15', while the inner end of the rail 8 is connected to the rail 7 by a bridge piece 25. The alinement of said rails and the bridge piece is effected by two members 26 and 29 each preferably provided with stops or flanges 26' and 29' and pivoted together at 31. The member 29 is pivotally attached at 30 to the end of the bridge piece 25 and the member 26 is pivoted at 8 to 27. When the two members 26 and 29 are extended so that the stops 26' and 29' rest on the upper faces of 25 and 8 they form a toggle joint which holds the rails 7 and 8 and the connecting piece 25 in rigid alinement. One end of a connecting rod 16 is pivotally attached to 15' at 15'' and the other end is pivoted at 17 at the point at which the crank lever 10 is attached to the end rail 7. A coiled spring 20 has one end attached at the point 17 and the other end to the pivot bolt 13 of the shift lever 12. Another coiled spring 21 has one end attached to the end of the bed frame and the other to the shift lever. The foregoing description represents a device which is provided in duplicate at each end of the couch and which said devices are connected by longitudinal bars 18—19 to each other, which with the end and body pieces form the frame work by which are supported the bed springs 31. A longitudinal brace 31' should be extended centrally between the two end bridge pieces.

My improved device for hinging the parts together consists of a plurality of members 32 and 33 pivoted together midway of their ends 34. One end of 33 is pivotally attached to a link 35 which is rigidly secured to the top member of the sofa, while the other end of said member 33 is pivoted to the free or swinging end of a link 36, which is pivoted at 37 to the body portion of the sofa. In like manner member 32 has one end pivoted to the link 38 rigidly attached to the body of the sofa, while the other end is pivoted to the swinging link 39 which is in turn pivoted at 40 to the top portion of the sofa. The construction is best shown in Fig. 4. If from this position the top is turned outwardly to the position shown in Fig. 1 (and as enlarged in Fig. 5), the members 32 and 33 will be extended turning on

the pivot 34, whereby the front pieces of the sofa will be extended and spaced from each other. When the top is turned in the other direction as shown in Fig. 2 the said members will be turned on the pivot so that the stationary brackets 35 and 38 will be substantially alined with each other inside the now closed body portion, permitting the two finishing pieces to rest edge to edge with their outer faces flush with each other. This action of the two members provided for by the attachment of the free ends to the swinging links 36 and 39 by which they are permitted to act in accordance with the movement of the swinging sofa portion.

When the parts described are in the position shown in Fig. 1 and the outer or swinging portion is lifted the tension of spring 20 acting through the crank lever 10 and the connecting rod 16 aids in the initial portion of the lift. The apparatus on the stationary portion begins to revolve on the pivots 9' and 10' under the tension of the spring and later under the influence of gravity, until the swinging portion takes the position approximately shown in Fig. 4. At this point the end rail 8 will drop from its own weight, folding itself on the swinging portion, causing the toggle joint, composed of members 26 and 29, to be broken, and allowing the bar 8 to fold over toward its final position in which it is spaced from 7 by the bridge piece 25. Meanwhile the pivot 17 will contact with the free or swinging arm of the shift lever 12, whereby the slotted end will be forced against the action of spring 21 past the dead center, permitting the crank lever 9 to swing downwardly into the position shown in Fig. 2, at which point the engagement of pivot 11' in the slot 11'' acts as a rigid stop. It will be noted that the said slot provides means by which the circular movement of crank lever 9 is effected, while retaining engagement with the shift lever 12.

In the initial reverse movement of the parts from position in Fig. 2 the action is aided by the tension of both springs 20 and 21, while the final movement is retarded by the action of said springs. At the same time the complete extension of bar 8 is made as the lower arm 15' is checked by its attachment through connecting rod 16 with crank lever 10.

I claim:

1. In a bed couch having a top and body portion movable relatively to each other; the combination therewith of a bed section on the top part, a bed section on the body part, means for pivotally attaching the said section to said body part, said means including a crank-lever having a long and a short arm, a lever pivoted to said body portion and having a slotted pivotal connection with the short arm of said crank-lever, and means

actuated by the bed section on the top part to shift said last named lever.

2. In a bed couch having top and body portions movable relatively to each other; the combination therewith of a bed section on the top part, a bed section on the body part, means for pivotally attaching the said section to said body part, said means including a crank lever having a long and short arm, a lever pivoted to said body portion and having relatively slidable connection with the short arm of said crank lever, and means actuated by the bed section on the top part to shift said last named lever.

3. The combination with a bed couch having relatively movable top and body portions, of a plurality of pivoted devices each comprising a plurality of members pivoted to each other, one of said members having a fixed pivotal attachment to the body portion of said couch, and a movable pivotal attachment to the top portion, and the other of said members having a fixed pivotal attachment to the top portion and a movable pivotal attachment to the body portion of said couch.

4. The combination with a bed couch having relatively movable top and body portions each provided with a fixed and a swinging pivot point; of members pivoted to each other, one of said members having one end attached to the swinging pivot point on the body and its other end attached to the fixed pivot point on the top, and the other member having one end attached to the fixed pivot point on the body and the other end attached to the swinging pivot point on the top of said couch.

5. In a bed couch having a top part and a body part movable relatively to each other; the combination therewith of a bed section on the top part, a crank lever adapted to support said bed section and having a dependent arm, a bed section on the body part, means for pivotally attaching the said bed section to said body part, said means including a crank lever pivoted to said body portion and having a slotted pivotal connection with the short arm of said crank lever, means actuated by the bed section on the top part to shift said lever, and a rod to connect the short arm of the first named crank lever with the bed section on the body part.

6. In a bed couch having a top part and a body part movable relatively to each other; the combination therewith of a bed section on the top part, a crank lever adapted to support said bed section and having a dependent arm, a bed section on the body part, means for pivotally attaching the said bed section to said body part, said means including a crank lever having a long and a short arm, a lever pivoted to said body portion and having a slotted pivotal connection with the short arm of said crank lever, and means

means actuated by the bed section on the top
part to shift said lever, a rod to connect the
short arm of the first named crank lever
with the bed section on the body part, a
5 bridge piece to connect the two bed sections,
and a toggle joint device to keep said sec-
tions and bridge pieces in alinement.

In witness whereof I have hereunto sub-

scribed my name this sixth day of February
A. D. 1912, in the presence of two subscrib- 10
ing witnesses.

FRITZ L. ANDREN.

Witnesses:

C. K. CHAMBERLAIN,

A. S. PHILLIPS.