J. A. ARTON

BED CHAIR.

APPLICATION FILED SEPT. 2, 1916.

1,336,062.

Patented Apr. 6, 1920.

3 SHEETS—SHEET 1.

Fig. 1.

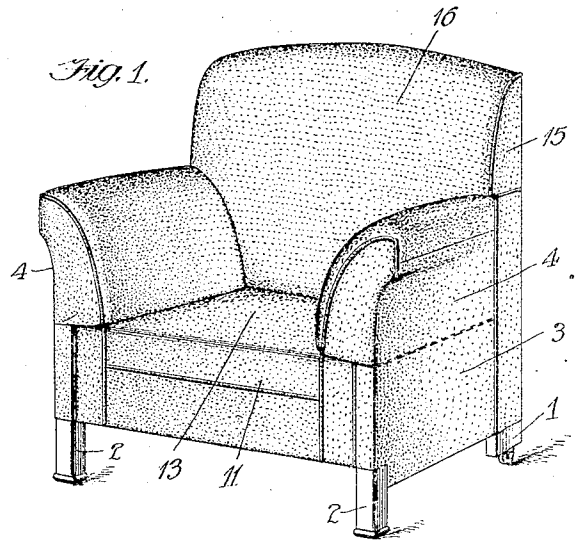


Fig. 4.

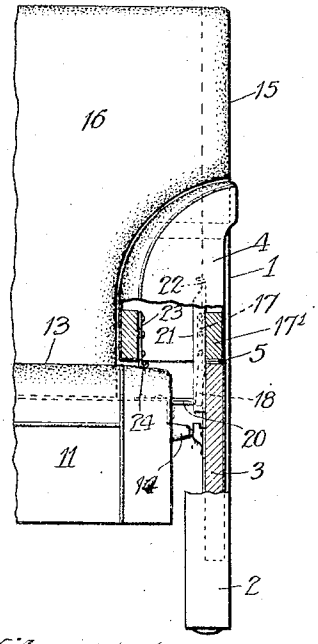


Fig. 5.

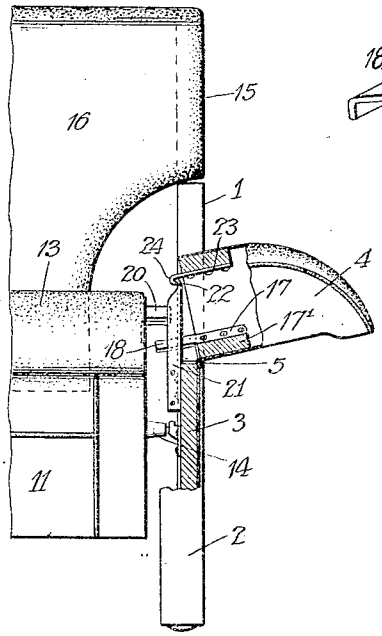
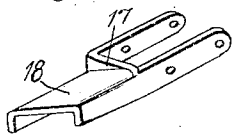


Fig. 6.



Witnesses
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3 SHEETS—SHEET 2.

Fig. 2.

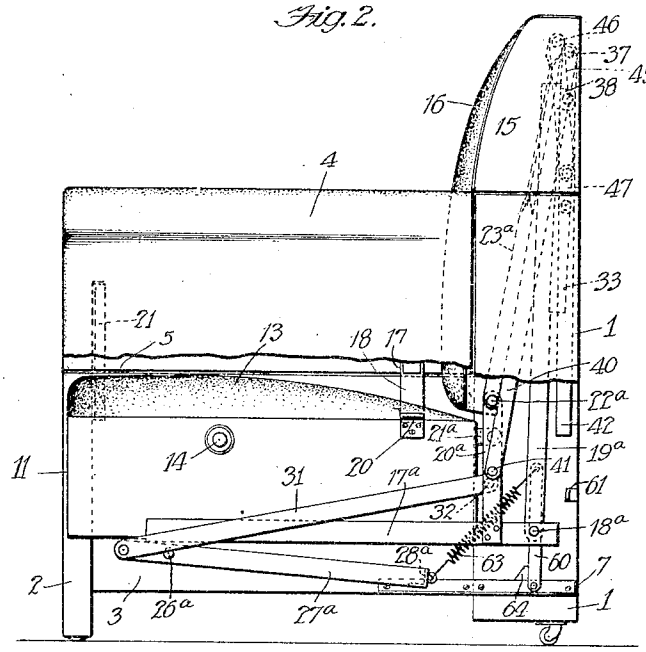
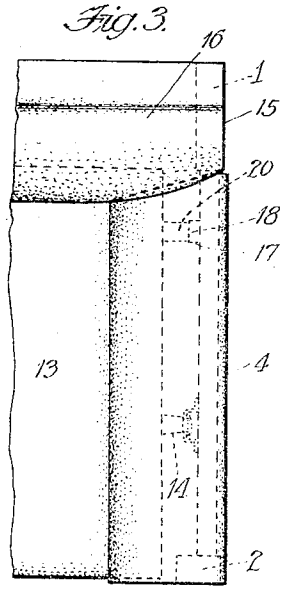


Fig. 3.



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3 SHEETS—SHEET 3.

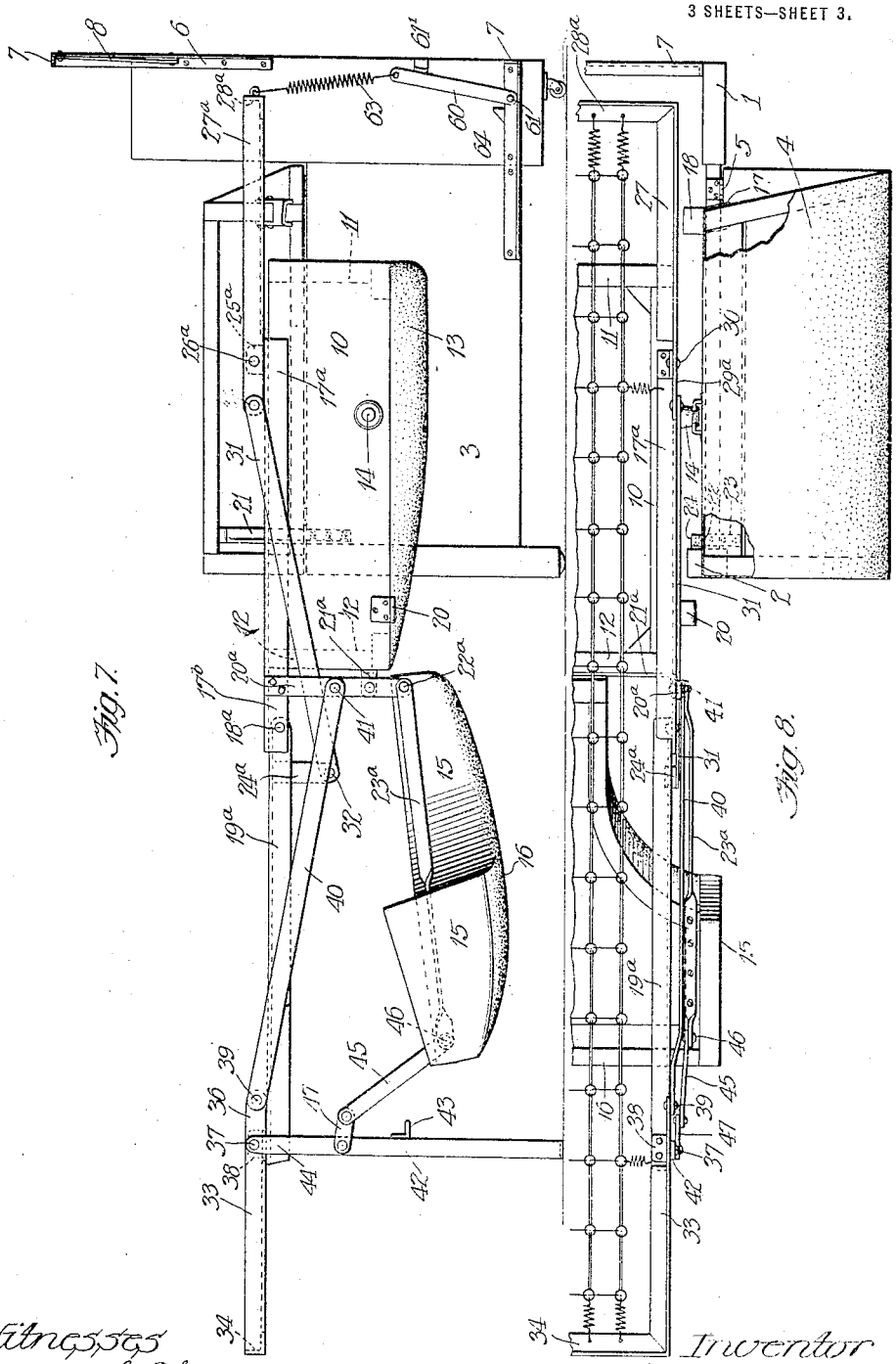

Fig. 7.

Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN A. ARTON, OF CHICAGO, ILLINOIS.

BED-CHAIR.

1,336,062. Specification of Letters Patent. Patented Apr. 6, 1920.

Application filed September 2, 1916. Serial No. 118,240.

To all whom it may concern:

Be it known that I, JOHN A. ARTON, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bed-Chairs, of which the following is a specification.

My invention relates to convertible furniture of the class in which a standard article of furniture for day use may be converted into a bed. It particularly relates to the primary use of a chair which may be overstuffed or heavily upholstered without exceeding the limits of size which pertain to chairs of that class. By means of my invention a folding bed frame of sufficient width to extend practically the whole distance inside the frame of the chair may be used without being limited to the space inclosed between the upholstered portions of the arms.

My invention is applicable to chairs or other similar articles of furniture, in which the seat in overturnable, and by means of my invention I am able when the seat is in its normal position to hold the arms rigidly in their upright position, while as the seat is overturned the said arms are released and extended to allow full movement to the seat and to the bed members carried thereby.

In the drawings:

Figure 1 is a perspective view of a bed chair embodying the principles of my invention;

Fig. 2 is an enlarged side view of the same, a portion being broken away;

Fig. 3 is a top view of one side of the chair;

Fig. 4 is a front view of one end, a part being broken away;

Fig. 5 is a similar view with the seat partly rotated, and an arm extended;

Fig. 6 is an enlarged detail of an arm actuating lever;

Fig. 7 is a side view with the bed members extended; and

Fig. 8 is a top view of one end of the same.

Further describing my invention with reference to the drawings: 1 and 2 are respectively the rear and front legs of a chair bed frame, while 3 is the side panel to which the arm 4 is hinged at 5. A framework, preferably of metal angles, may be used to connect the rear posts, having the vertical members 6, and the transverse members 7. A seat having the end piece 10, the front or finishing piece 11, and the back piece 12, provided on its normally upper side with upholstery 13, is swung at the ends and overturnable on trunnions 14, which are attached to the end pieces or panels of the frame. The said trunnions are so constructed that the seat and its attachments may be readily removed therefrom, but they are adapted to lock the ends of the frame together by means of the seat and so constructed that accidental removal is practically impossible.

A back having side pieces 15 and upholstery 16 may be pivotally connected to the normally rear edge of the seat, although a stationary back may be used. The arms 4 have a proper foundation framing, and are built of full size and upholstered in accordance with the class of chair represented, being hinged to the panels at or adjacent to the outer sides thereof, and they extend inwardly for a considerable space so as to cover the ends of the seat. A lever 17 shown in Fig. 6 is attached to the framing of the seat at 17′ so that the free end 18 will extend inwardly when the arm is in the position shown in Fig. 5, but will be in substantially vertical position when the arm is in the closed position shown in Fig. 4. A lug 20 is attached to the end of the seat in such a position that as the latter is turned so that the upholstery is on the upper side in its normal position the lug will engage the free end 18 of lever 17, causing the arm to be turned inwardly until the seat has reached its final and normal position, at which time the said lug will rest against the free end of said lever as indicated in Fig. 4, holding the arm rigidly in place. The reverse movement of the seat frees the lever 17 from the engagement of lug 20, allowing the arm to fall outwardly and thereby to give space for the seat with its attached bed construction to be overturned. An upwardly projecting member 21 is attached to the chair frame or panel and the upper side thereof is formed into a hook 22. A corresponding member 23 is attached to the arm 4 and is provided with a hook 24,

which is adapted to engagement with hook 22, thereby forming a rigid stop to hold the arm at its point of greatest extension.

The principles of my invention thus far have been stated broadly with reference to a chair having a revoluble seat long enough to fill the available space between the sides or panels of a chair, and having arms extendible over the said seat and which may be opened outwardly to give clearance for the seat when overturned. While the principles of my invention are of general application to other forms of bed fixture, I will further specifically describe it with reference to a bed fixture which is the subject matter of my pending application for Patent No. 62,721, filed November 22, 1915, in which provision is further made for the use of a back which may be accommodated to the seat and arms described, and which may be carried upon the said bed fixtures.

The folding bed structure referred to is adapted to be connected to the underside of the chair seat and extended transversely therefrom in opposite directions. One section thereof, having a plurality of end members 17^a is attached to the underside of the seat, and the ends 17^b are extended rearwardly therefrom. To the said extended ends are pivoted at 18^a the members 19^a which form the ends of the back section of the bed. Drop arms 20^a are securely attached to the extended portions of the members 17^a and are connected near their lower ends by the tie pieces 21^a to the normally rear portion of the seat, thereby providing means by which at 22^a the vertical framing piece 23^a of the back may be attached to the seat. Drop arms 24^a are attached to the back section members 19^a at a short distance from the point of their pivotal attachment to the seat member 17^a. Brackets 25^a are secured to the seat section members 17^a at points adjacent to their inner ends and have upwardly turned flanges to which at 26^a are pivoted end members 27 of the head section. The outer ends of said members are attached to each other by the cross piece 28^a and together form a head section for the completed bed frame. The inner ends 29^a of the head section are formed by cutting away the lateral flange of the hanger of which the member is composed, thereby leaving the vertical flange which will pass readily by the outer face of the seat member 17^a when turned as hereinafter described. Pivots 30 attach the inner ends of said members 29^a to one end of connecting bars 31. The other end thereof is pivoted at 32 to the drop arms 24^a on the back section members 19^a. The outer or foot end of the bed frame is formed similarly to the head section and consists of end members 33 connected by transverse angle bars 34, thereby forming a foot section. The inner ends of the end members have the lateral flanges cut away for some distance, leaving the vertical flanges which form levers 36, which are pivoted at 37 to the bracket 38. At the extreme end said levers are pivoted at 39 to one end of connecting bar 40, the other ends of which are pivoted at 41 to the drop arm 21^a. A pair of legs 42 connected to each other by the cross rod 43 are formed of angle bars, one flange being cut away at the upper end, leaving a flat portion 44, which is pivoted at 37 to the bracket 38. It will be noted that the pivot 37 is the same as that by which the members 19^a and 35 are secured to the said bracket. Links 45 are pivoted at one end 46 to the upper end of the back framing bars 23^a and at the other end by means of a short link 47 to the legs 42.

A device by which the initial step of opening and the final step of closing the bed are assisted, and by which the bed is rendered stable and supported in the open position is provided in connection with the head section. A lever 60 is pivoted at one end 61 and to the other end is attached to one end of a helical spring 63 whose upper end is connected to the outer extremities of the bed section. The free end of lever 60 should swing in contact with an abutment 61′ and its forward movement should be limited by a stop 64.

As illustrated in Figs. 1 and 2, the seat and back of the structure are in their normal positions when used as a chair. The seat 13 and back 16 are approximately at right angles to each other. The head members 27^a are folded under the seat members and the spring 63 is under tension, the lever 60 being turned forward to its extreme point of movement. The foot section, together with the supporting legs and the bedding holder, are suspended in a substantially vertical position from the upper part of the back.

When it is desired to use the structure as a bed and to unfold the bed members, the operator takes hold of the central portion of the back 16 and advances it to a point where the overweight of the back and attachments is nearly overcome. A continuing forward pull overcomes the overweight, when the apparatus will begin to open out automatically. It is unnecessary to explain the further action of the bed members in detail. It is sufficient to say that when the back is lifted so that it no longer rests upon the upper and rear portion of the arms, and the engagement of lugs 20 with the inner arm 18 of the lever 17 is released, the arms 4 will drop outwardly, thus giving clearance for the seat to turn, together with the bed members, and permit a semi-revolution of the seat and extension of the bed members, the back being carried over to the position illustrated in Figs. 7 and 8. As the bed is closed

and the seat is rotated to normal position the engagement of lugs 20 on the inner end of lever 17 closes the arms upon the seat and the back is finally restored to its normal position as shown in Fig. 1.

I claim:

1. In a chair; a frame, an overturnable portion including a seat pivoted to the frame, a plurality of arms pivotally connected to the frame and inwardly projecting to cover the ends of the seat, and devices on the overturnable portion and the arms adapted to mutual engagement whereby the arms will be released when the seat is overturned and turned upwardly when the seat is restored to normal position.

2. In a chair; a frame, an overturnable portion comprising a seat and bed forming members, arms pivotally connected to the frame, and devices on said overturnable portion and said arms adapted to mutual engagement, whereby the arms will be released when the seat is overturned and turned upwardly when the seat is restored to normal position.

3. In a chair; a frame, a seat overturnable thereon, arms pivotally connected to the frame, and devices on the arms and seat adapted to mutual engagement whereby the arms will be held upright when the seat is in normal position and released when the seat is overturned.

4. In a chair; a frame, a seat overturnable thereon, arms pivotally connected to the frame, levers on the arms, and lugs on the seat adapted to engagement with the said levers whereby the arms will be held upright when the seat is in normal position and released when the seat is overturned.

5. In a chair having a frame, a seat reversible thereon, and a bed section attached to the seat and extended substantially to the ends thereof, the combination therewith of arms pivotally connected to the frame and extendible inwardly over the ends of said seat and the edges of said bed section, and devices on the arms and seat adapted to mutual engagement when said seat and arms are relatively in normal position and disengageable by the rotation of the seat.

6. In a chair; a frame, an overturnable portion comprising a seat and bed forming members, arms hinged to the frame, and devices on said overturnable portion and said arms adapted to mutual engagement whereby the arms will be released when the seat is overturned and said arms will be turned upwardly when the seat is restored to normal position, engaging devices on the arms and rigid stops secured to the frame extended into the arc of movement of said engaging devices to limit the movement of the arms when released.

JOHN A. ARTON.