J. P. STRAND.

CONVERTIBLE CHAIR AND COUCH.

APPLICATION FILED MAY 21, 1917.

1,287,789.

Patented Dec. 17, 1918.

2 SHEETS—SHEET 1.

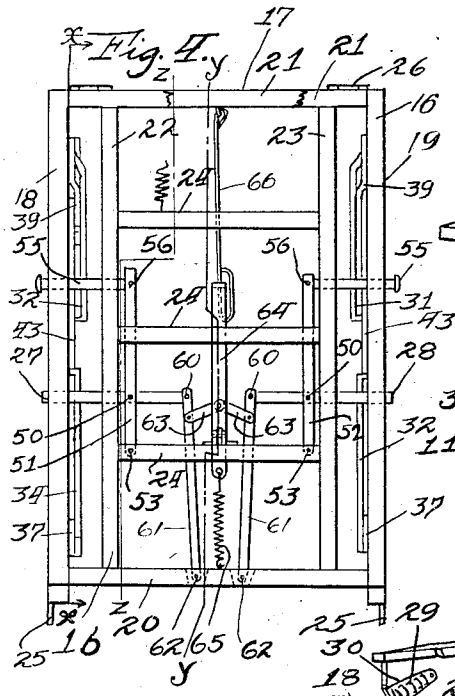


Fig. 4.

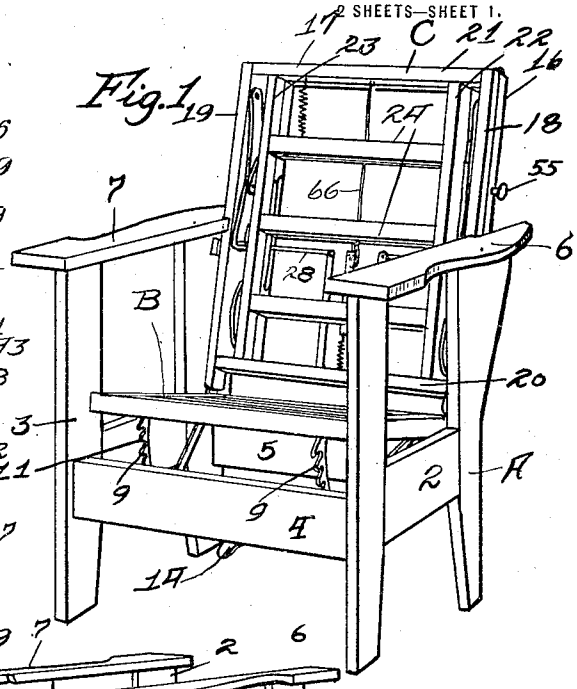


Fig. 1.

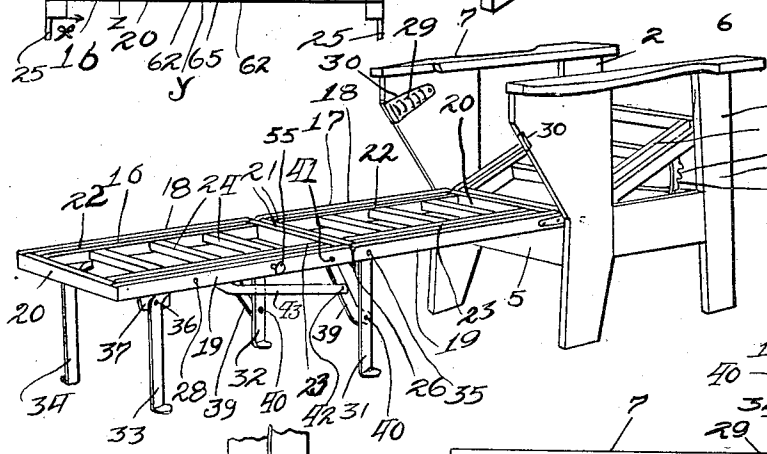


Fig. 2.

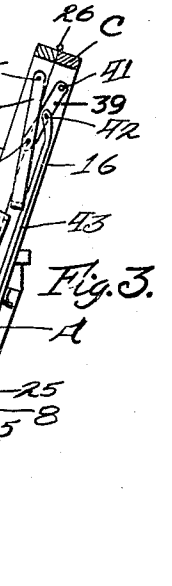


Fig. 3.

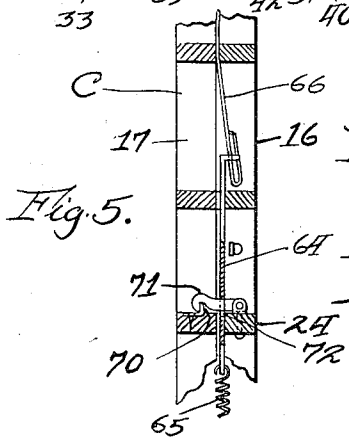


Fig. 5.

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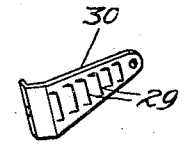


Fig. 7.

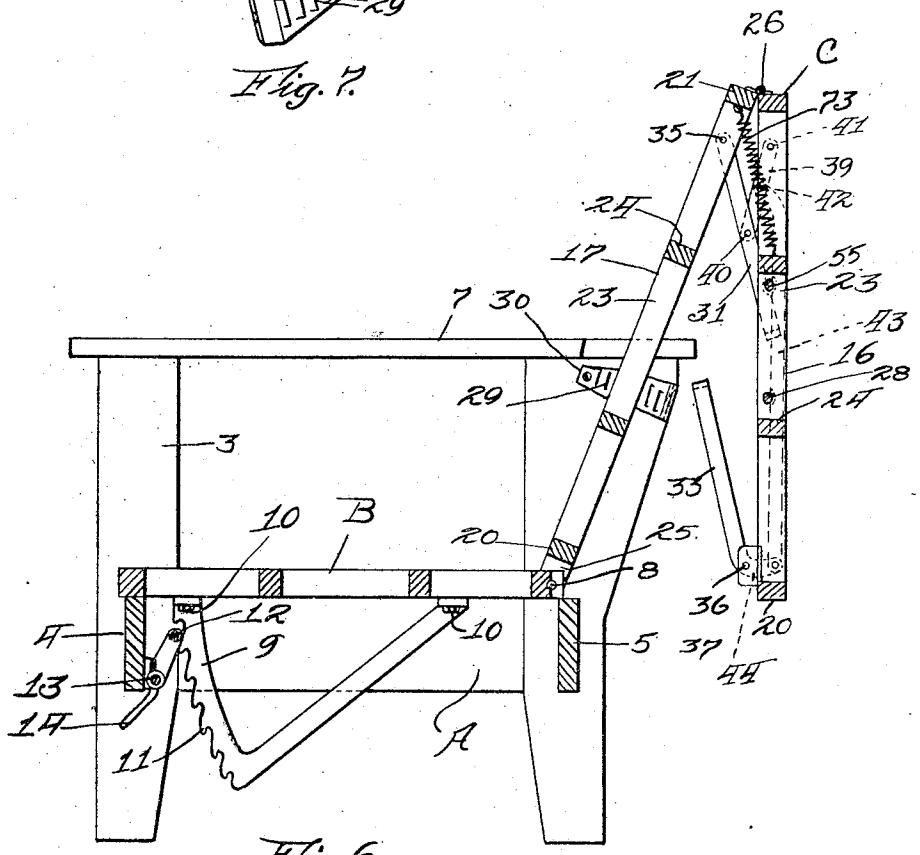


Fig. 6.

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UNITED STATES PATENT OFFICE.

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CONVERTIBLE CHAIR AND COUCH.

1,287,789. Specification of Letters Patent. Patented Dec. 17, 1918.

Application filed May 21, 1917. Serial No. 170,079.

To all whom it may concern:

Be it known that I, JOHN P. STRAND, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Improvement in Convertible Chairs and Couches, of which the following is a specification.

This invention relates to an improved convertible chair and couch, the primary object being to provide a structure of its kind, which can easily be changed either into a chair or a couch, and which when so changed will be strong and rigid.

A further object is to provide locking mechanism by which the parts of the device are held either in folded, extended or adjusted position. Among further objects are simplicity of construction and greater effectiveness in use.

To these ends my invention comprises the features of construction and combination of parts hereinafter more particularly described and claimed.

In the accompanying drawing forming part of this specification, Figure 1 is a perspective of my invention when the parts are in folded position to produce a chair, the seat being raised in inclined position; Fig. 2 is a perspective of my invention when the parts are in extended position to be used as a couch; Fig. 3 is a vertical section when the parts assume the position of a chair, part of said section being on the line X—X of Fig. 4; Fig. 4 is a back elevation of the back of the chair; Fig. 5 is a section of a detail taken on line Y—Y of Fig. 4; Fig. 6 is a longitudinal section, the section on that portion of the device illustrated in Fig. 4, being on line Z—Z thereof, and Fig. 7 is a perspective of a detail.

As illustrated in the drawing, the frame of my improved structure is illustrated, it being understood that said frame is to be upholstered in the usual manner as is customary with chairs, couches and other articles of furniture, said upholstering not being illustrated.

In the drawing, A indicates the body frame of the chair, which is composed of two vertical parallel skeleton side frames 2 and 3, which are joined in spaced relation by the transverse seat supporting bars 4 and 5. 6 and 7 indicate the usual arm rests, which are respectively mounted upon the upper ends of the side frames 2 and 3. The parts described are suitably joined to produce a rigid structure. Mounted within the structure described is a rectangular seat frame B, which is hinged by the pintle rod 8 passing across and into the side frames and through the seat frame, so that the forward end of said seat frame can be raised and said seat frame made to assume a rearwardly and downwardly inclined position when desired as illustrated in Fig. 1. When the seat frame is in lowered or horizontal position, its forward end rests on the upper edge of the cross piece 4. Secured to and depending from the lower side of the seat frame are a suitable number of racks 9, which are fastened by bolts 10 or other suitable means, said racks being constructed on an arc described from the pivot point of the seat frame and said rack members being formed with ratchet teeth 11 over which the pawl rod 12 sweeps to automatically engage said teeth and hold the seat frame in selectively inclined position at any inclination desired. The weight of the pawl rod causes it to automatically engage the teeth, but the pawl rod is pivotally mounted at 13 upon the front cross bar 4 and is provided with a downwardly and forwardly extending foot pedal 14 by the depression of which the pawl can be moved out of engagement with the teeth 11 and the seat permitted to be lowered. When the seat member is raised, it is adapted to form the head rest of a couch which will be hereafter described.

The chair is provided with a back C, which can be lowered into extended position and made to produce the body portion of a couch. This back is formed by two rectangular skeleton frames 16 and 17, each of which is formed by side members 18 and 19 and cross members 20 and 21, inner longitudinal members 22 and 23 and a plurality of transverse bars 24, which are secured to the members 22 and 23. The longitudinal members 22 and 23 lie parallel to and are spaced inwardly a short distance from the side members 18 and 19. One end of the back member 17 is hinged by the hinge leaves such as 25 to the pintle rod 8. The opposite end of the back member 17 from that which is hinged to the chair frame is hinged at 26 to one end of the back section 16, so that the sections 16 and 17 will fold upwardly together between their ends when the section 17 is turned upwardly upon its hinges from the position illustrated in Fig. 2 into the

position illustrated in Fig. 1. When in raised position, ratchet pawl or lock pins 27 and 28 carried by the back section 16 to be hereinafter described engage one of the series of rack teeth 29 on the rack teeth fixtures 30 (see Fig. 7), which are secured to the inner faces of the side frames 2 and 3 to support the back C with its members 16 and 17 folded together at selectively inclined position as illustrated in Fig. 1. The back members 16 and 17 are adapted to lie in a single plane in outturned or extended position, and are supported horizontally when unfolded by means of the folding legs 31, 32, 33 and 34, the legs 31 and 32 being hinged by the pintles 35 to the back member 17 and the legs 33 and 34 being hinged to brackets 37 on the outer end of the back member 16 by the pintles 36.

Each set of legs that is the legs 31 and 33 or 32 and 34 is provided with coupling means whereby the legs constituting each set when swung from folded into standing position or vice versa will act simultaneously. This coupling means of each set consists of a brace arm 39 pivoted at 40 to the leg 31 and at 41 to the side member 19 of the frame 16. The brace arm in turn is pivotally attached at 42 midway between its ends to a longitudinal link 43, which is also pivotally connected to an arm 44 on the leg 33. Thus when the frames 16 and 17 are unfolded into outstretched position, the legs automatically swing into vertical position, and serve as rests to support the frames horizontally in position, so that they can be used as the body of a couch. It will be understood that the upper or outer surfaces of the frames 16 and 17 and of the seat frame B are intended to be upholstered to form cushions. The ratchet pawls 27 and 28 slide outwardly through the longitudinal bars 18 and 22 and 19 and 23, their inner portions being pivotally attached at 50 to lever arms 51 and 52. One end of each of these lever arms is pivotally mounted at 53 on one of the bars 24 of the back member 16 and the other end is provided with a push piece 55, which is pivotally attached thereto at 56. These push pieces 55 slide outwardly through the side bars of the back member 16, so that when the push pieces are pushed inwardly the lock pins 27 and 28 are also moved inwardly out of engagement with the ratchet teeth 29 of the fixtures 30. For the purpose of causing the lock pins to disappear in and the push pieces to recede against the sides of the frame member 16 when the back members are extended so that there will be no objectionable projections on said member, the inner ends of the ratchet pins 27 and 28 are pivotally attached at 60 to the ends of the arms 61, which are also pivotally attached at 62 to the cross member 20. The pair of arms 61 in turn are connected by toggle links 63 to a longitudinal shifting arm 64, which slides freely on the frame. One end of this shifting arm is secured by an expansion spring 65 to the cross member 20 and the other end is slidably coupled to an actuating rod 66, said actuating rod in turn being freely coupled to the cross member 21 of the adjacent section 17 of the back. Mounted upon one of the cross bars 24 of section 17 is a catch shoulder 70 (see Fig. 5) with which a hook 71 hingedly carried by one of the adjacent cross bars 24 of section 16 of the back is adapted to engage and hold the sections 16 and 17 locked together when they are in folded position. This hook 71 passes through a slot 72 in the shift bar 64, so that when the shift bar is pulled upwardly against the tension of the spring 65 by the simultaneous depression of the push rods 55, the hook 71 is raised into disengaged position and the lock pins 27 and 28 simultaneously withdrawn from engagement with the ratchet teeth 29, thus allowing the sections of the back to be turned downwardly and outwardly into horizontal position. As the members swing outwardly, the pull rod 66, due to the swinging movement of the sections of the back slides the shift bar 64 with the lock pins 27 and 28 and the push pieces 55 into receded or depressed position out of the way, so that there is no danger of anything catching upon the sides of the section 16. There is sufficient play between the end of the pull rod 66 and the bar 64, so that when the sections of the back are folded, the lock pins 27 and 28 and push pieces 55 are freed by the tension of the spring 65 before the sections reach fully closed position, so that the lock pins 27 and 28, and the hook 71 are free to spring automatically into engagement respectively with the teeth 29 and the catch 70 and hold the parts in adjusted position. The spring 73 attached to sections 16 and 17 assists in closing said sections together.

In accordance with the patent statutes I have described the principles of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the construction shown is only illustrative and that the invention can be carried out by other means and applied to uses other than those above set forth within the scope of the following claim.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:—

A convertible chair and couch, comprising, in combination, a chair frame having a tiltable seat adapted to form a chair seat and a head rest of a couch and a sectional back hinged to said frame, the sections

thereof being hinged together and adapted to swing upwardly and fold together to form a back and to turn backwardly into outwardly extending horizontal position, means for supporting said sections in extended position, a catch carried by one of said sections and adapted to engage the other sections and hold said sections together in folded position, ratchet pawl members recedable in the sides of the outer section, ratchet teeth carried by the inner section with which said pawl members are adapted to releasably engage to hold said sections at selectively inclined position on said chair frame, push elements for depressing said pawl members, and means held under spring pressure and attached to both of said sections for releasably urging said hook into engaging position and said pawl members into engagement with said teeth, said attachment of said means to said sections being arranged so that when said sections are extended into horizontal position said pawl members are moved into receded position for the purposes specified.

In testimony whereof, I have signed my name to this specification.

JOHN P. STRAND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."