M. J. FOYER.

FOLDING BED.

APPLICATION FILED MAR. 26, 1915.

1,285,664.

Patented Nov. 26, 1918.

7 SHEETS—SHEET 1.

Fig. 30.

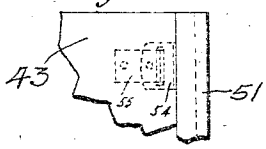


Fig. 31.

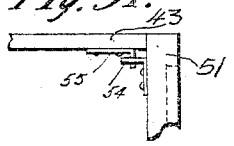
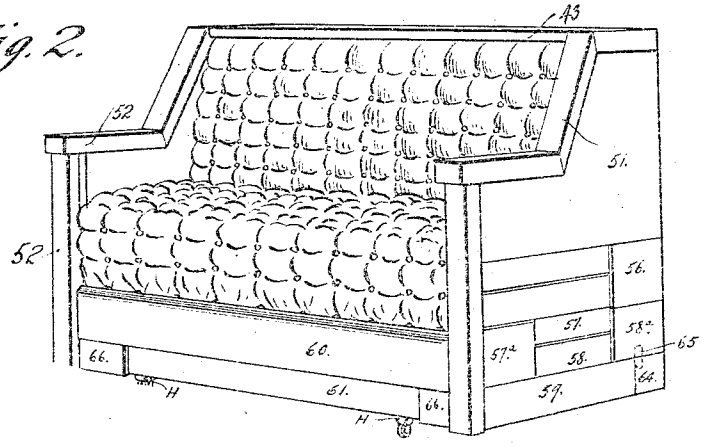


Fig. 1.

Fig. 2.



Witnesses

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7 SHEETS—SHEET 2.

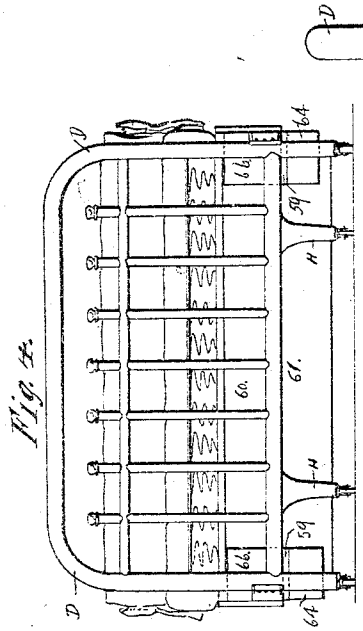


Fig. 4.

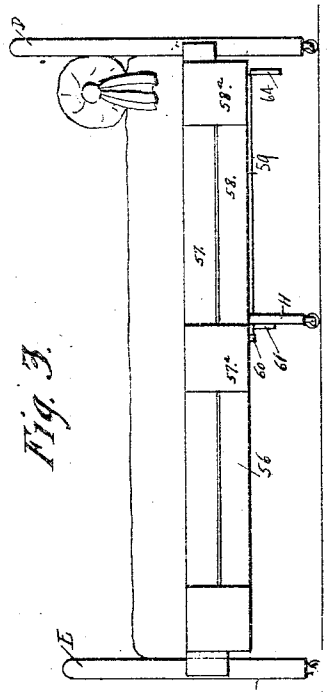


Fig. 3.

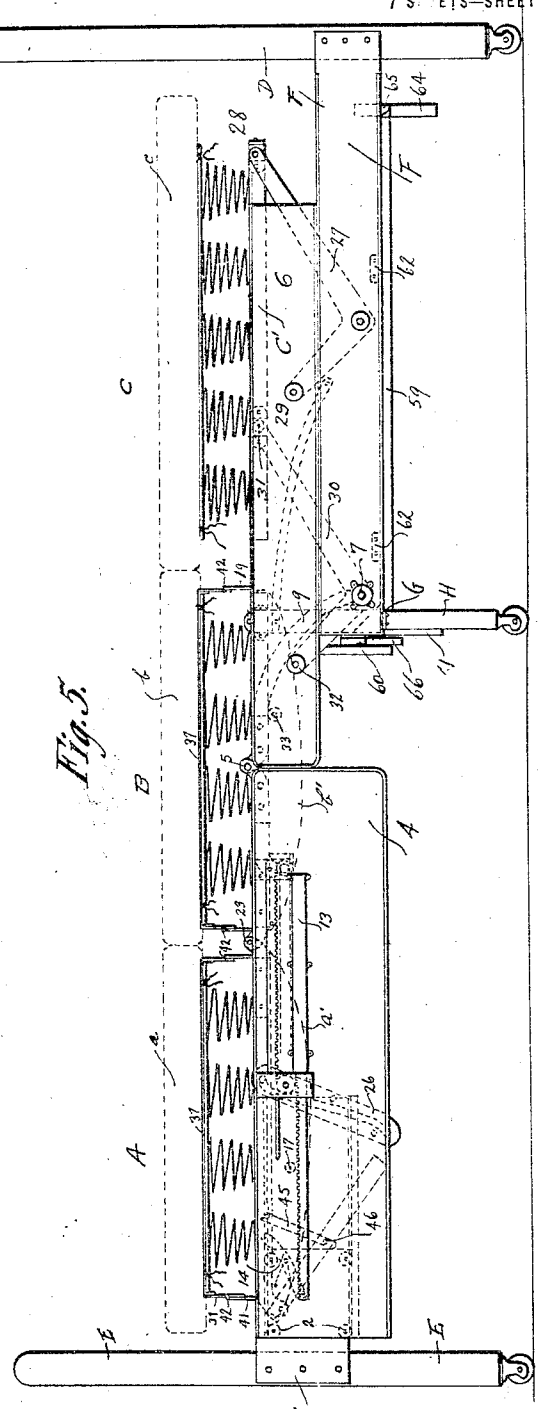


Fig. 5.

Witnesses

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7 SHEETS—SHEET 3.

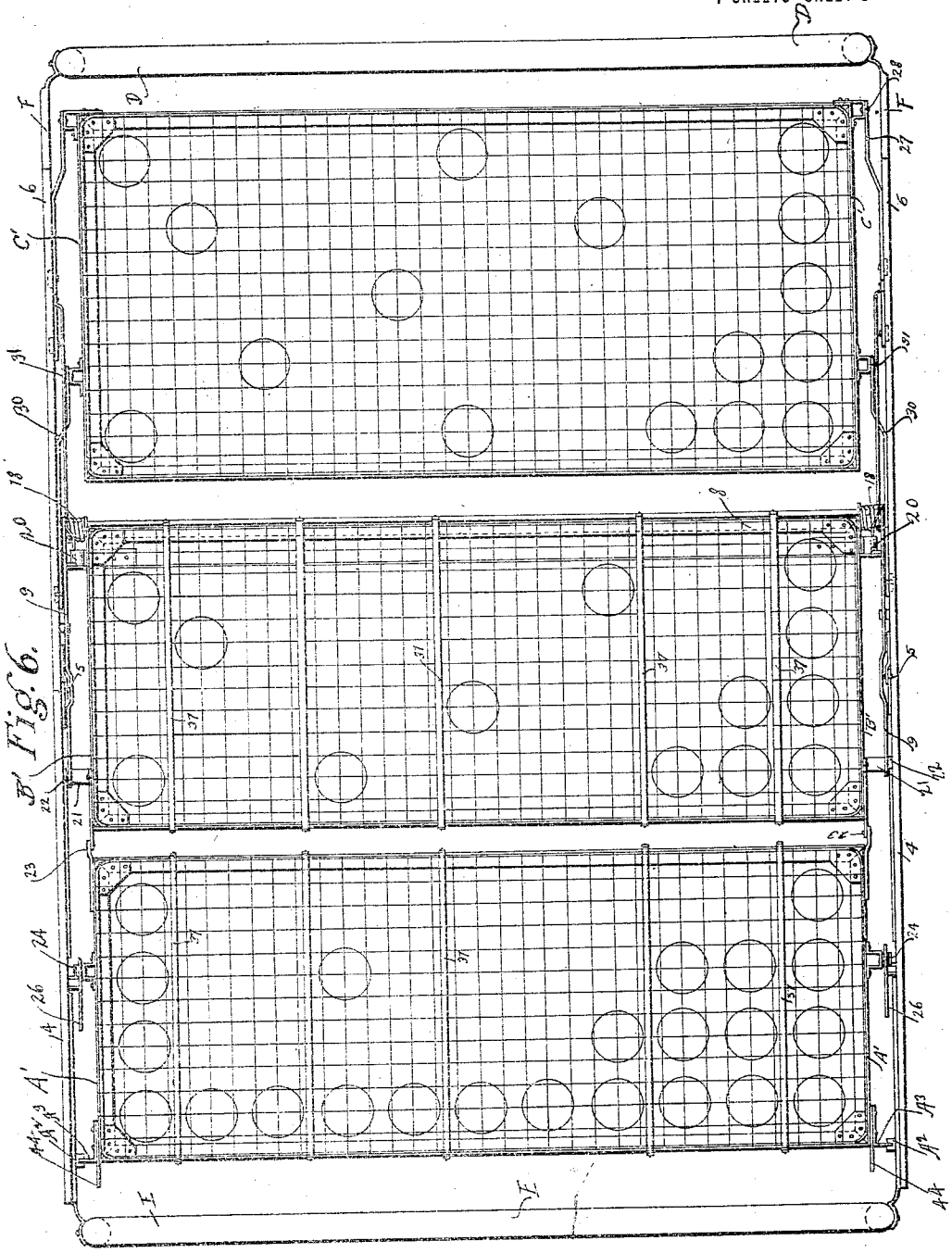


FIG. 6.

Witnesses
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APPLICATION FILED MAR. 26, 1915.

1,285,664.

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7 SHEETS—SHEET 4.

Fig. 15.

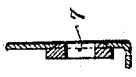


Fig. 14.

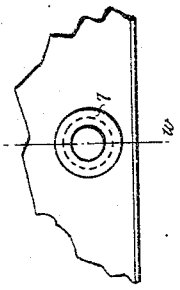


Fig. 7.

Fig. 12.

Fig. 16.

Fig. 17.



Fig. 11.

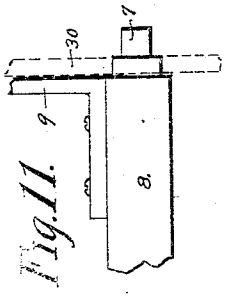
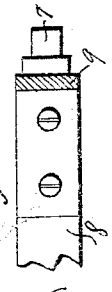


Fig. 13



Witnesses

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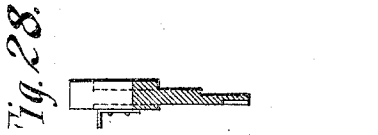


Fig. 28.

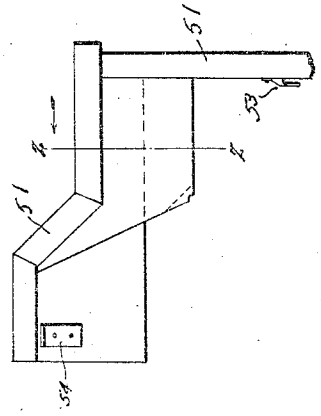


Fig. 27.

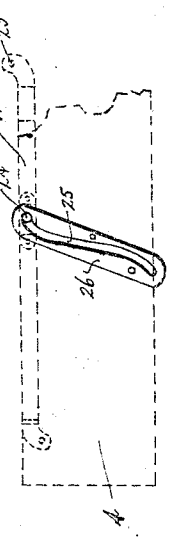


Fig. 21.

Fig. 8.

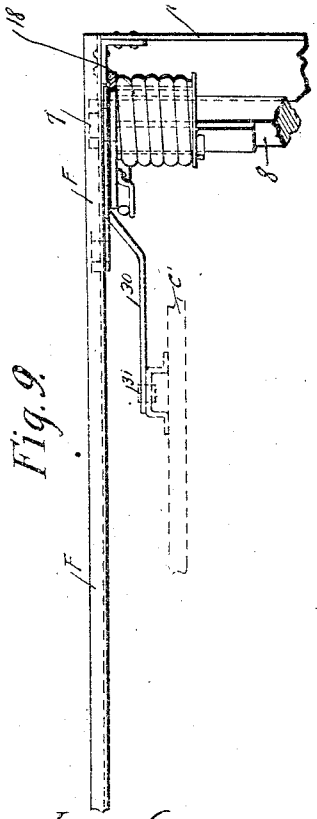


Fig. 9.

Witnesses

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FOLDING BED.

APPLICATION FILED MAR. 26, 1915.

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Patented Nov. 26, 1918.

7 SHEETS—SHEET 6.

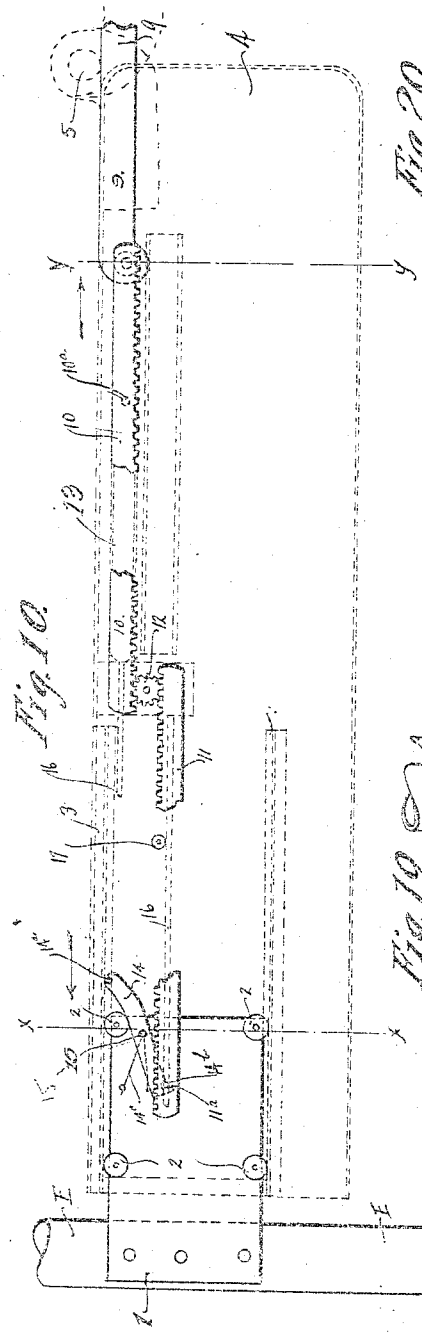


Fig. 10.

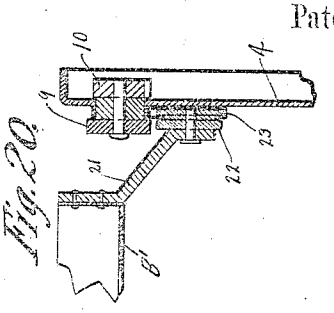


Fig. 20.

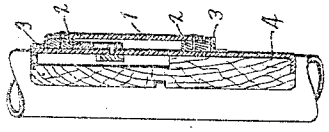


Fig. 19.

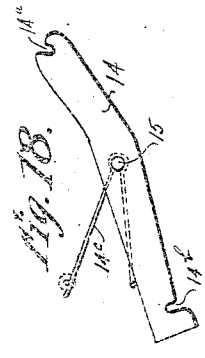


Fig. 18.

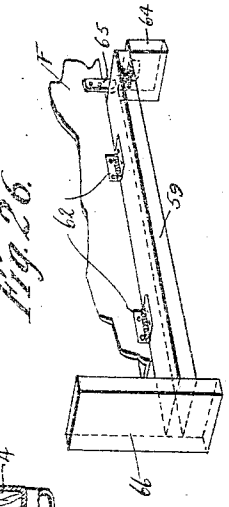


Fig. 26.

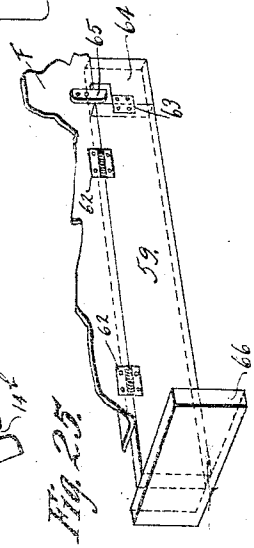


Fig. 25.

Witnesses

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APPLICATION FILED MAR. 26, 1915.

1,285,664.

Patented Nov. 26, 1918.

7 SHEETS—SHEET 7.

Fig. 22.

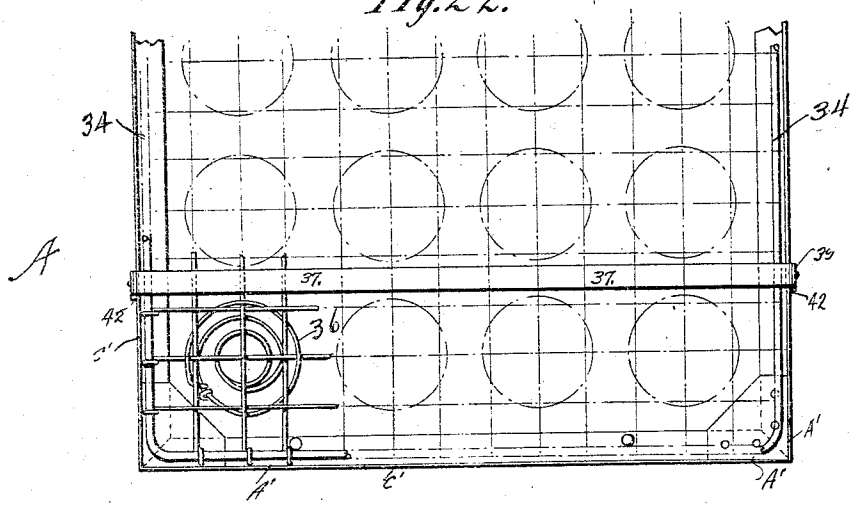


Fig. 23.

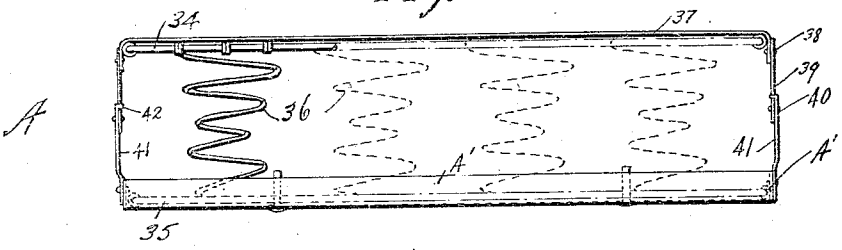


Fig. 24.

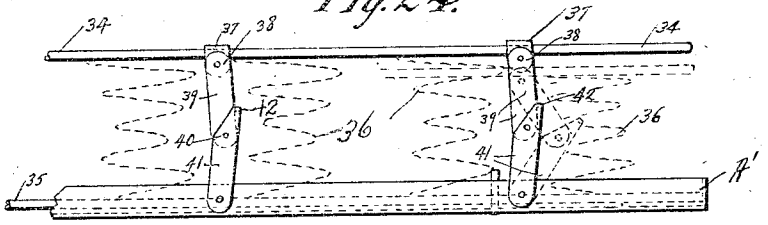
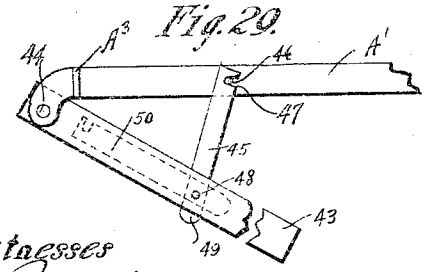


Fig. 29.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

MELVIN J. FOYER, OF TOLEDO, OHIO.

FOLDING BED.

1,285,664. Specification of Letters Patent. Patented Nov. 26, 1918.

Application filed March 26, 1915. Serial No. 17,198.

To all whom it may concern:

Be it known that I, MELVIN J. FOYER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Folding Beds; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The principal objection to a sofa or divan which may be converted into a bed and to a bed which may be converted into a sofa or divan, is that the device when in bed form suggests a sofa, and when in sofa form suggests a bed, and in either case gives the impression that the thing is neither one or the other, but merely a makeshift.

My invention is designed to overcome the objection here indicated, and, more particularly, to provide a device of the character described which, when in folded form, as a sofa, shall not suggest a bed and which, when in extended form, shall have the appearance of a common bed, provided with a head-piece and a foot-piece of the usual type. My invention is further designed to provide a device of the sort referred to which consists of three main sections adapted to be disposed in sofa form and pivotally connected in such fashion that two of the sections may be easily and automatically swung by the same operation into operative relation with the other section either as a sofa or bed. My invention is further designed to provide a construction which admits of the use of coiled bed-springs and mattresses such as are employed in the better class of beds and in "box" mattresses. My invention is also intended to furnish a construction in which the width of the bed shall correspond with the length of the sofa, thus avoiding undue length of the sofa as a couch.

I attain these objects by means of the devices, construction and arrangement of parts hereinafter described, and shown and illustrated in the accompanying drawings, in which—

Figure 1, is a side-elevation of my device, folded as a divan, with the wood or other outside finish removed to show the metal parts and their connection; Fig. 2, a perspective view of my device folded as a divan; Fig. 3, a side-elevation and Fig. 4, an end-elevation,—seen from the foot,—of my device as a bed; Fig. 5, a side-elevation of the same, extended in unfolded form, with the side finish removed to disclose the mechanism hereinafter referred to; Fig. 6, a top-plan view of the same; Fig. 7, a side-elevation of the same, partly folded; Fig. 8, a side-elevation of a portion of the base, one of the reciprocating side-bars hereinafter referred to, and certain links and levers hereinafter referred to; Fig. 9, a top-plan view of the same; Fig. 10, a side-elevation of the mechanism for projecting and retracting the foot-portion of the bed as it is folded over next and close to the head-piece of the bed, including the rails upon which such projection and retraction take place as well as the rail carrying bar and the reversible racks and their pinions mounted on such bar as hereinafter explained; Fig. 11 is an elevation of the shaft, its journal, one of the bell-crank levers and one of the pair of arms secured to the shaft as hereinafter referred to; Fig. 12, a side-elevation of the same; Fig. 13, a top-plan view of the same partly in horizontal section; Fig. 14, an end-view of the bearing for said shaft; Fig. 15, a vertical sectional elevation of the same taken on line *w—w*, Fig. 14; Fig. 16, a top-plan view of one of the hinges hereinafter referred to; Fig. 17, a side-elevation of the same; Fig. 18, a side-elevation of one of the pivoted trip-bars hereinafter referred to, designed by its swing and form to connect the foot-piece of the bed with either of the oppositely moving rack-bars hereinafter referred to, for the purpose to be explained; Fig. 19, a sectional elevation, taken on line *x—x*, Fig. 10; Fig. 20, a sectional elevation taken on line *y—y* Fig. 10; Fig. 21, a side elevation of slotted bar hereinafter referred to for elevating the foot-section of the bed into horizontal alinement with the remaining bed-sections; Fig. 22, a top-plan view of one of the bed-spring sections hereinafter referred to; Fig. 23 an end-view of the same; Fig. 24, a side-view of the same; Fig. 25, a detail view of foldable members constituting the bottom of the ends of my device when in sofa form; Fig. 26, the same when the device is in unfolded or bed form; Fig. 27, a detail of the top of the device when in sofa form, seen from one end; Fig. 28 a sectional elevation of the same taken on line *z—z* Fig. 27; Fig. 29, an end-

view of the pivoted top for the device when in sofa form, together with the locking device which holds it in place; Fig. 30, a bottom-plan view of the devices for detachably locking together the top and end-pieces of the sofa illustrated in Figs. 27 and 29, and Fig. 31 an end-view of the same.

Both sides of my device are alike and it should be understood that the operating mechanisms depicted in the drawings are duplicated at opposite sides of the bed or sofa.

Like letters and numerals of reference indicate like parts throughout the drawings.

This device, as a bed, is composed of three main sections designated as A B and C, A being the foot-section, B the middle section and C the head-section. The foot-section and the middle-section are upholstered on both top and bottom, the portions *a* and *b* being mattress-sections forming part of the bed, the other sides *a'* and *b'* forming, respectively, the seat and back of the sofa. The head-section is provided on top only with a mattress-section as at *c*. These several sections correspond in length with the length of the sofa and with the width of the bed. D is the head-piece of the bed and E is the foot-piece of the bed. These two pieces are of the usual or any preferred construction preferably of brass or iron. Rigidly secured to the opposite sides of the head-piece D are bed-rails F corresponding in length to the width of the device when in folded or in sofa form. The ends of these bed-rails are connected by a cross-piece of angle iron, G. The cross-piece G is supported intermediate its ends by legs H, these and the legs of the head-piece being provided with suitable casters. It will now be seen that the head-piece, the bed-rails, the cross-piece G and the legs H form a stout horizontal rectangular base or frame upon and from which the remainder of my device is supported and operated.

When the device is folded as a sofa the foot-piece E is inverted and stands close to, parallel with and in front of the head-piece D. In swinging the foot-piece into such position, the top of the foot-piece would, without suitable provision against such mishap, strike against the head-piece D. To overcome this difficulty, it is necessary that the foot-piece in swinging from its extended position, as in Figs. 3 and 5, into its folded position as in Fig. 1, be retracted as it swings into its folded position and again projected as it falls into substantially vertical position, so that it now occupies the position indicated in Fig. 1. To accomplish this swinging and reciprocating motion, I provide the mechanism now to be described.

Rigidly secured to the sides of the foot-piece E are vertically disposed plates 1 upon the outer sides of which are mounted four rectangularly arranged rollers 2. These rollers engage and travel upon and between flanged rails 3 which are secured in horizontal parallel relation to the inner sides of the rail carrying bars 4. It will now be seen that the foot-piece E has a horizontal movement between the rail carrying bars toward and away from the head-piece. The rail carrying bars are respectively pivotally connected as at 5 at their upper corners farthest from the foot-piece to reciprocating bars 6 disposed above and parallel to the bed-rails F. Between the bed-rails F near the cross-bar G is journaled, as at 7, a shaft 8 to which are secured at one of their ends arms 9 the other ends of these arms being pivotally connected with one end of rack-bars 10. 11—11 are rack-bars opposed to the rack-bars 10 there being interposed between these rack-bars and engaged therewith a pinion 12 journaled on the outer sides of the rail carrying bars 4. These rack-bars are mounted in guides or ways 13 so that they always move parallel to each other. The arrangement of the rack-bars and the pinion 12 is such that when one rack-bar moves in one direction, the other rack-bar must necessarily move in the opposite direction. Upon the outer side of each of the plates 1 near their forward edge is pivoted a trip-bar 14 as at 15. These trip-bars are notched at or near their ends as at 14^a—14^b. Upon the rack-bar 11 is a pin 11^a and upon the rack-bar 10 is a pin 10^a. These pins project horizontally through and slide in slots 16 in the rail carrying bars 4 and are arranged respectively for engagement with the notches in the trip-bar 14. The trip-bar is held in correct position for engagement with the pins 10^a and 11^a by means of the spring 14^c. (See Fig. 18.)

Assuming that the device is in extended position, as illustrated in Fig. 5; when the foot-piece E is lifted at the beginning of the folding operation, the arm 9 secured to the shaft 8 presses at its outer end upon the rack-bar 10 causing it to move forwardly, thus rotating the pinion 12 which in turn causes the rack-bar 11 to move in the opposite direction. The rack-bars 11 being engaged by means of pins 11^a with the notches 14^b in the trip-bars 14 pivotally secured to the plates 1, these plates with their attached foot-piece are now caused to move horizontally upon the rollers 2 and the guides or ways 3 toward the head of the bed. This movement of the foot-piece inwardly continues until the folding operation upon the pivot 5 is nearly completed and until the top of the foot-piece has cleared the head-piece. At this point, the lower edges of the trip-bars 14 strike rollers 17, mounted upon the outer side of the plate 1, throwing the trip-bars out of engagement with the pins 11^a and at the same time throwing the

notches 14^a at the opposite ends of the trip-bars into engagement with the pins 10^a on the rack-bars 10. Now, as the folding operation continues, the foot-piece, being now connected with the rack-bars 10 through the trip-bars 14, is caused to move in the opposite direction along its supports 4 and close to and in parallel relation with the head-piece of the bed. Of course when the device is opened into extended or bed form, the reverse of the operation here described takes place.

The operation of folding and unfolding the bed is aided by means of powerful coiled springs 18 embracing the shaft 8, one end of each spring being engaged with the bar 9, as illustrated in Figs. 8 and 9, the other end of the springs contacting with the cross-bar G. As the device is folded from the position illustrated in Fig. 7, the spring is placed under tension which relieves the shock of the folding of one portion upon the other and aids in unfolding the device when it is to be placed in bed form.

The groups of bed-springs for the sections A—B—C are supported upon rectangular angle-iron frames A^1—B^1—C^1 illustrated in Figs. 6, 22, 23 and 24, by means of cross-wires extending between the sides and ends of the frames. The spring supporting frame B^1 is pivoted at its corners nearest the head-piece, as at 19, upon the top of standard 20, secured to the piece G near its ends. Near its other corners the frame B^1 is provided with downwardly projecting arms 21 upon the lower ends of which are journaled rollers 22 which travel in a grooved piece 23 secured to the inner side of the rail-carrying bar 4. The spring supporting frame A^1 is pivotally connected to the spring supporting frame B^1 at opposite corners, as at 23′, by joints the same as shown in Fig. 17. This frame A^1 is also supported by means of rollers 24 movable in curved slots 25 in bars 26 rigidly secured to the outer side of the rail carrying bars 4. The rollers 24 when in the top of the slots 25 press directly downwardly and thus form a support for the frame A^1. The frame A^1 when in extended position is supported next to the foot-piece of the bed by small brackets A^2 secured to the inner side of plates 1 upon which rest fingers A^3 secured to the outer side of frame A^1. (See Fig. 6.) When the bar 4 is tilted the roller is free to travel in the slot, and the frame A^1, by reason of the longitudinal movement of bar 6, is free to swing on its pivot 23.

27 is a bell-crank lever fulcrumed on the bed-rail F, the extremity of one arm of which is pivoted to the corner of the spring supporting frame C^1, as at 28, the other arm of the lever being pivoted to the bar 6 as at 29. 30 is another bell-crank lever fulcrumed on the shaft 8 one arm being pivoted to the frame C^1 as at 31, the other arm being pivoted to the bar 6 as at 32. Mounted upon the bar 6 and in the same plane with and in the path of the arm 9 is a roller 33.

Assuming that the device is in extended form, that the three bed sections are in horizontal alinement and that the device is to be folded into sofa-form, the operator lifts the foot-piece E swinging it upwardly and forwardly upon the pivot 5. This movement permits the roller 24 to fall in the slot 25 so that the bed section A swings downwardly on its pivot 23 into the position illustrated in Fig. 7, where it is held against further movement on its pivot by the roller having reached the opposite end of the slot. In the meantime, at the beginning of the swing upwardly of the foot-piece, the weight of the bed section C swings downwardly the inner arms of the bell-cranks 27—30 swinging upwardly and backwardly the bar 6 carrying the roller 33 which, pressing upon the under side of the bar 9, aids in the lift and swing of the foot-portion of the bed. The swing of the foot-portion is continued the foot-piece being retracted and projected during the course of its swing, as above described, until the foot-piece, now inverted, is side by side with and close to the head-piece, the under side of the bed-portions A—B being now uppermost and, being upholstered, the seat and the back for a sofa are now provided.

Sections A and B are each provided with two parallel frames 34 and 35 between which are interposed coil springs 36. Metal strips 37 are secured to frames 34 and bent at their ends at right angles thereto sufficient in length to permit of their being pivotally connected as at 38 to links 39 which in turn are pivotally connected as at 40 to links 41 which are pivotally connected to frame A^1. Links 41 are provided at their upper ends with projecting members 42 which keep the links 39 and 41 out of alinement with each other. This arrangement makes it possible to use one side of the coil springs for mattress-sections when the device is in bed form and the other side of the springs for a seat and back, respectively, when in sofa form with equal facility; the links 39 and 41 serving to keep the spring-sections from falling out of the frames A^1 and B^1 when in service position as a back and seat, respectively, and also by virtue of the method by which they are held in place permitting full advantage to be taken of their resiliency and conversely when the springs are brought into service position as a bed, the links 39 and 41 being held out of alinement, permit flexing of the springs freely.

The piece 43, a detail of which is shown in Fig. 29, forms the top of the device when in sofa or folded form. The piece 43 is pivoted to A^1 as at 44 and through a notched member 45 may be detachably connected to A^1 by means of a notch 47 in the piece 45 to a projecting

pin 46 when in unfolded position in bed form. By reference to Fig. 29, it will be seen that notched piece 45 is pivotally connected to 43 at 48 in such manner as to permit disengaging it by pressing on the opposite end of it at 49. 50 is a recess for 45 when piece 43 is in service position as a top for the device as shown in Fig. 1.

Parts 51 and 52 form the upper sides and front of the end-portions of the device when in sofa form shown in detail in Figs. 27 and 28. These parts rest on rail carrying bars 4 and are secured to cross-bar G near the ends thereof by hooks 53 near the bottom, and further supported at their tops by engagement of the pieces 54 and 55 (shown in Figs. 30—31) the former being rigidly fastened to top-piece 43 and the latter to the side-pieces 51 and 52. 56—57—58—59—60—61 are ornamental pieces made preferably of wood or steel, enameled to match the parts 51—52—43. The piece 56 is rigidly fastened to the rail carrying bar 4. The part 57^a is rigidly fastened to piece 57 which in turn is made rigid to reciprocating bar 6. Piece 58^a is rigidly fastened to the piece 58 which in turn is made rigid to base-rail F. The part 59 (a detail of which is shown in Figs. 25 and 26) is pivotally connected by means of spring-hinges 62 to the bottom of the bed-rail F, the springs being so constructed that they are at rest when the hinge-leaves are at right angles to each other. Pivotally attached to the piece 59 at the rear thereof through hinges 63, is piece 64 which forms an extension of the piece 59. Projecting below and rigidly attached to the rail F are steel fingers 65 which are so positioned that the pieces 64 are pressed against the finger close to the pivoted ends of the pieces 64 as shown in Fig. 25. Rigidly attached to the pieces 59 at their front ends are pieces 66 one end of which covers the openings which must be left at the ends of the front-piece 61 to permit the part 59 to swing into the position shown in Fig. 26. It will be observed that the front piece 60 is set out from cross-bar G far enough to leave an opening to permit the ends of the parts 66 to swing between them and cross-bar G.

In order to change the device from a sofa to a bed I first turn the top-piece 43 over forwardly on its pivots 44 until it assumes the position relative to frame A^1 shown in Fig. 29. This causes notched bar 45 to fall out of its recess 50 in piece 43 and to engage projecting pin 46; I then lift pieces 51—52 off their supports (cross-bar G and rail carrying bars 4) and set them into a suitable rack or other convenient receptacle made for the purpose. I next grasp the top of frame A^1 and pull it forward and away from the head of the bed. This causes the frame B^1 to turn on its pivots 19, which in turn causes the bars 4 to turn on their pivots 5 and the arms 9 to move forward along the rail carrying bars 4. Being engaged with racks 10 through trip-bars 14 the foot-piece E is caused to move toward the mattress *a* until it has passed out of danger of striking the head-piece D. By this time the trip-bars 14 will have traveled forward sufficiently to come in contact with rollers 17 which releases them from rack-bars 10 at 10^a and engages them with rack-bars 11 at 11^a. This causes the foot-piece to travel in the opposite direction and away from the head of the bed. It continues traveling in this direction until the unfolding movement has been completed when it comes to rest at the proper distance from the head-piece, as shown in Figs. 3 and 5. The movement of the arms 9 just referred to is directly affected by the springs 18 until the bars 4 reach the position relative to bar 6 shown in Fig. 7. At this point the arms 9 come into contact with rollers 33 and as bars 4 are moved forward and downward, the reciprocating side-bars are caused to move forward and to elevate the section C which now assists in maintaining the device in substantial equilibrium until the section A has traveled on its rollers 24 to the top of the slot 25 in the bar 26. The device is thus automatically locked in service position as a bed with the sections A—B—C in horizontal alinement.

While this movement has been taking place the pieces 56—57—57^a—58—58^a—59—64 and 66 have been moving into their proper places as shown in Fig. 3. The parts 56 being rigidly attached to the rail carrying bars 4, have taken their places at the foot-end of the bed; the parts 57 have moved forward with reciprocating bars 6 to which they are rigidly attached, carrying with them their pieces 57^a which cover the opening between F and 4 made in consequence of bars 6 having moved forward from bed-rails F. The openings at the opposite end of bars 6, between them and the head-piece D are closed by the pieces 58^a which remain stationary, being as above explained rigidly fastened to the bed-rails F with piece 58.

With the movement forward and upward of the bell-crank levers 27—30 the spring-hinges 62 force the parts 59 into a position at right angles to bed-rail F as shown in Figs. 3 and 5. This, of course, disposes the parts 66 in the spaces provided for them between the part 60 and the cross-bar G as shown in Fig. 3. When the reverse operation takes place and the bed is folded into sofa form the bell-crank arms 27 and 30 force the pieces 59 into parallel relation with base-rail F, the finger 65 being in the path of pieces 64 forces it into its proper place as shown in Fig. 25.

While I have here, by way of illustration, explained means for causing three main sections of a sofa to fold and unfold in har-

mony to effect the change from a sofa to a bed and vice versa, many equivalent modifications of the devices and arrangements herein illustrated and described will suggest themselves to those skilled in the art, and I do not, therefore, limit myself to these specific devices for effecting these various movements of these sections.

It will be seen that my divan of a length corresponding to the width of the bed may be changed from one form to the other without moving the device from a position against a wall.

It will be seen that in its folded form my device presents the appearance of a luxurious cushioned divan, with the foot-piece and the head-piece concealed, and that when extended and supplied with the usual bed-clothing the device presents the appearance of and in fact is a bed.

Having described my invention, what I claim and desire to secure by Letters Patent, is—

1. In a folding bed, a head piece, a foot-piece, a base to which the head-piece is rigidly secured, and extensible foldable connections intermediate the base and the foot-piece whereby the foot-piece may be folded in inverted position in front of the head-piece.

2. In a device of the described character, a base which includes a bed head-piece, reciprocating bars movable upon said base, a bed foot-piece having side plates rigidly connected thereto, rail supporting members reciprocable upon said plate, hinged connections between said reciprocating bars and said rail supporting members, combined with a plurality of bed-sections foldably connected together, one of said sections being upholstered on one side as a sofa-back and means actuated by the folding of said hinged bars and members one upon the other for inverting said upholstered bed-section.

3. In a device consisting of a plurality of movably connected members adapted to unfold into bed form, a base, reciprocating bars movable upon the base, rails, rail supporting members pivotally connected with said bars, an invertible seat-section, a back-section, and means actuated by the swing of the rail supporting members upon said pivotal connections for moving said back-section into service position as a bed in harmony with the inversion of said seat-section.

4. In a device of the described character, a head-piece, a foot-piece, a plurality of sections foldably connected with a base frame, each of said sections being provided with a mattress section, one of said sections being upholstered on its opposite side as a back, another of said sections being upholstered on its opposite side as a seat, reciprocating bars, rails upon which said foot-piece is movable toward and from the base, rail supporting members pivotally connected with said bars, means actuated by the relative movement of said bars and rail supporting members for simultaneously swinging said several mattress sections into horizontal alinement.

5. In a folding bed, three principal sections, reciprocating bars, rails, rail supporting members pivoted to said bars, a base upon which said bars are mounted, pivotal connections between said base and said principal sections whereby said three sections may be disposed in horizontal alinement; a head-piece and a foot-piece, one of said pieces being connected with said rail supporting members and movably carried by said rails, the other of said pieces being rigidly connected with the base, and connections intermediate said pivoted sections and said base whereby the swing of said pivoted sections into horizontal alinement brings said foot-piece into appropriate relation to the foot of the bed.

6. In a device of the described character, a base, a head-piece rigidly connected with the base, a foot-piece, pivotal extensible connections between the base and the foot-piece, and means governed by the folding of said foot-piece for disposing said foot-piece close to and parallel with said head-piece and in inverted position.

7. In a folding bed, a base, a plurality of sections pivotally connected with said base and foldably connected with each other and adapted to be thrown into horizontal alinement, two of said sections being invertible, a head-piece and a foot-piece, one of said pieces being invertible with said invertible sections, the other piece being rigidly attached to said base, combined with means controlled by the movement of said invertible piece for disposing said sections in folded or unfolded relation.

8. In a device consisting of a plurality of movably connected sections adapted and arranged to unfold into bed form, a base with which said sections are connected and upon which they fold, a head-piece and a foot-piece, the head-piece being rigidly attached to the base, the foot-piece being foldably connected with the base, and in said structure a suitable recess for the reception and concealment of said foot-piece when in folded relation.

9. In a device of the described character, a plurality of main sections foldably connected together, a base-frame, reciprocating bars mounted thereon, rail supporting members pivotally connected with said bars, a head-piece carried by the base, a foot-piece carried by the rail supporting members, for each of said main sections a mattress section, means governed by the mutual movement of said bars and rail supporting members for simultaneously moving said several

mattress-sections into horizontal alinement and for bringing said foot-piece into appropriate relation to said mattress sections.

10. A folding bed consisting of a base, reciprocating bars mounted thereon, rail supporting members pivotally connected with the base, three principal sections, devices actuated by the swing of the rail supporting members for moving said sections into or out of horizontal alinement, combined with a head-piece secured to the base and a foot-piece carried by the rail supporting members, and means for disclosing the head-piece when the sections are in extended position and means for concealing the front side of said head-piece when said sections are folded.

11. A folding bed consisting of three principal sections, a base upon which the sections may be moved into or out of horizontal alinement, connections between said sections by which they are caused to move simultaneously into and out of folded relation, a stationary head-piece and a movable foot-piece pivotally connected with said base and devices which dispose said foot-piece at the rear of said base when the bed is folded.

12. A folding bed consisting of a base combined with a head-piece rigidly attached thereto, three principal sections operatively connected with said base and adapted to be moved into or out of horizontal alinement, a foot-piece pivotally connected with the base, means for the concealment of said foot-piece, and means for moving said foot-piece into and out of concealed position simultaneously with the folding and unfolding of said sections.

13. In a folding bed, three principal sections which may be swung into and out of horizontal alinement, two of said sections forming respectively a head-section and a foot-section, connections between said head-section and foot-section whereby the movement of one of said sections causes a corresponding movement of the other section, a base, a head-piece rigidly connected with the base, a foot-piece, rails, and rail-supporting members upon which the foot-piece reciprocates, and means actuated by the swing of the rail supporting members upon their pivotal supports for moving the foot-piece into and out of appropriate relation to the head-piece.

14. In a folding bed, a base, a head-piece rigidly connected to the base, reciprocating bars pivotally connected to the base, a foot-piece, rail supporting members slidably connected with the foot-piece, connections between said base and said reciprocating bars and said rail supporting members whereby the movement of said rail-carrying members moves said foot-piece into and out of appropriate relation to the foot of the bed.

15. In a folding-bed, a base, reciprocating bars mounted upon the base, rail supporting members, pivoted for swinging upon one end of the reciprocating bars, a shaft journaled in the base, arms rigid upon the shaft, and connections between the shaft, the arms, the reciprocating bars, and the rail supporting members for operating said several members simultaneously.

16. In a folding bed, a base, a head-piece rigidly attached thereto, a foot-piece, rail supports connected slidably with the foot-piece and pivotally with the base, a plurality of mattress-sections foldably connected and suitably supported intermediate the head-piece and the foot-piece, and means for operating the foot-piece, rail-supports and mattress-sections in unison.

17. A base, rail carrying members pivotally connected with the base, a foot-piece connected with the rail carrying members, and means attached to the base for imparting movement to the rail carrying members relative to the foot-piece as the foot-piece is moved.

18. In a folding bed, a base, rail carrying members pivotally and slidably connected to the base, a foot-piece connected with the rail carrying members, bed-sections pivotally connected with the rail carrying members, and means attached to the base for imparting movement to the rail carrying members, the foot-piece, and the sections simultaneously as the foot-piece is moved.

19. In a device of the described character, a base, a head-piece rigidly secured thereto, a foot-piece, pivotal connections intermediate the foot-piece and the base whereby the foot-piece may swing to the rear of the base, and devices for substantially balancing said foot-piece and its said connections during their swing to and from the base.

20. In a device of the described character, a base-frame including in its construction a bed head-piece; a bed foot-piece, supports upon which the foot-piece may be reciprocated, connections between the base-frame and the foot-piece whereby the latter may be folded in inverted position close to and in parallel relation with said head-piece, and means actuated by such folding operation for reciprocating the foot-piece.

21. In a device of the described character, a stationary base, a head-piece rigidly secured thereto, a movable portion pivotally connected with said base and adapted to fold upon said base and adapted to unfold into horizontal alinement therewith, a foot-piece, slidable connections between the foot-piece and said pivoted movable portion, and devices connected with the base and actuated by the swing of said movable portion upon its said pivotal connections for reciprocat-

ing said foot-piece upon its sliding supports during the folding and unfolding of said movable portion.

22. In a device adapted to fold into sofa-shape and to unfold into bed-shape, three sections, each section comprising a pair of frames, springs which press the frames in each pair apart, secured to one side of each pair of frames a mattress, the other side of two of said frames being upholstered; a base, pivotal connections between the base and the pairs of frames, means actuated by the unfolding of the device for placing said three pairs of frames in horizontal alinement, and means actuated by the reversal of such operation for bestowing said upholstered pairs of frames at an angle to each other and above the remaining pair of frames.

23. In a folding device of the described character, a base, a bed head-piece carried by the base, a bed foot-piece, pivotal extensible connections between the base and the foot-piece whereby the foot-piece may be folded close to and parallel with the head-piece, movable covering pieces carried by the base, and means controlled by said folding operation for operating said covering pieces.

24. In a folding-bed, comprising a plurality of bed-sections, a base, a shaft journaled therein, bell crank levers on the shaft, reciprocating bars movable relatively to the base and connected with the bell crank levers, and a mattress-section connected with the bell crank levers and arranged to be raised and lowered by the movement of said bars and thus brought into alinement with others of said sections to form a bed bottom.

In testimony whereof I affix my signature in presence of two witnesses.

MELVIN J. FOYER.

Witnesses:
GERTRUDE BRACKER,
N. W. BUNCE.