S. GOLDSTEIN.

BED DAVENPORT OR COUCH.

APPLICATION FILED FEB. 17, 1913.

1,078,044.

Patented Nov. 11, 1913.

3 SHEETS—SHEET 1.

Fig. 2.

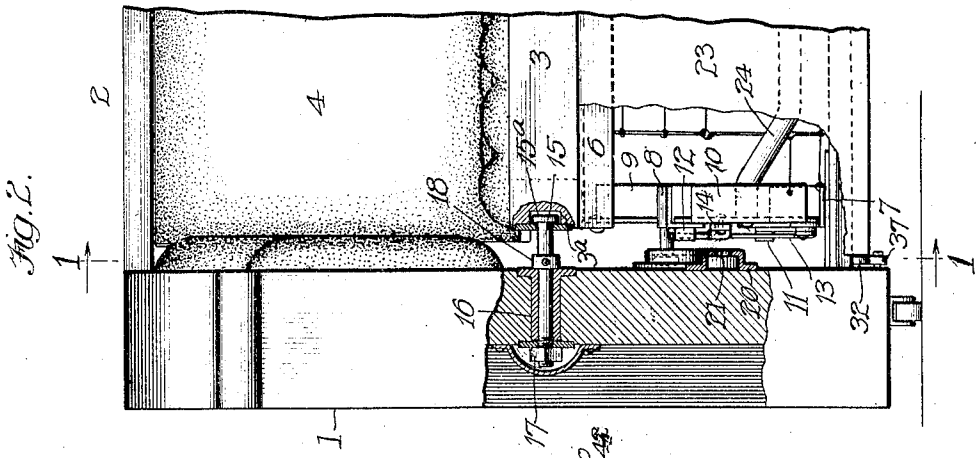
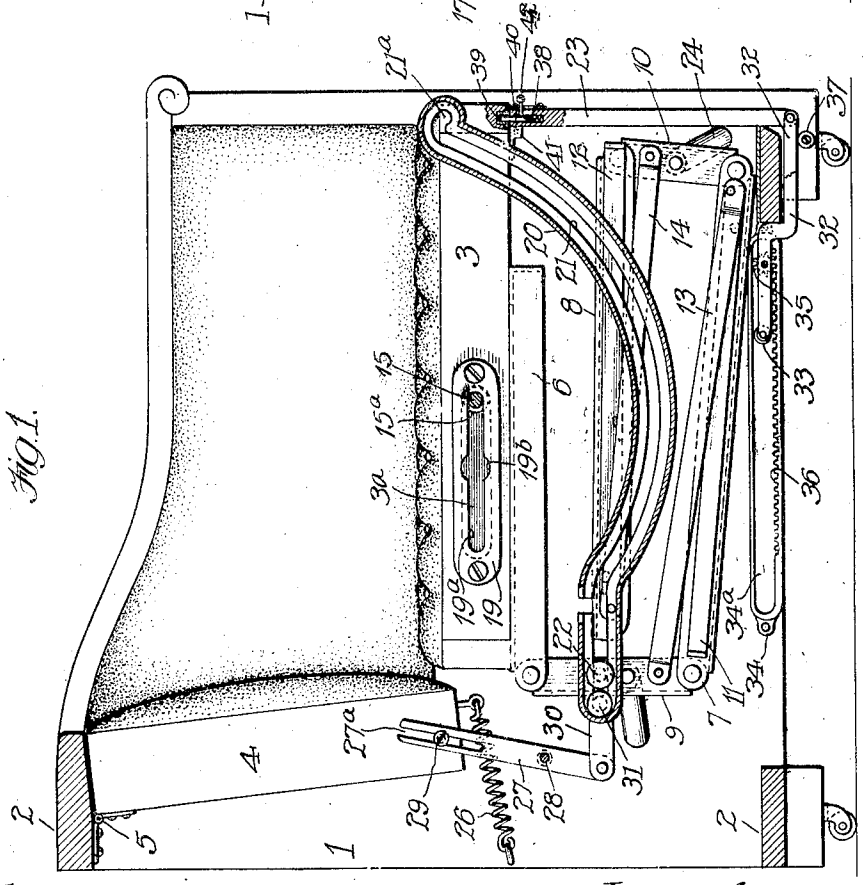


Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 3.

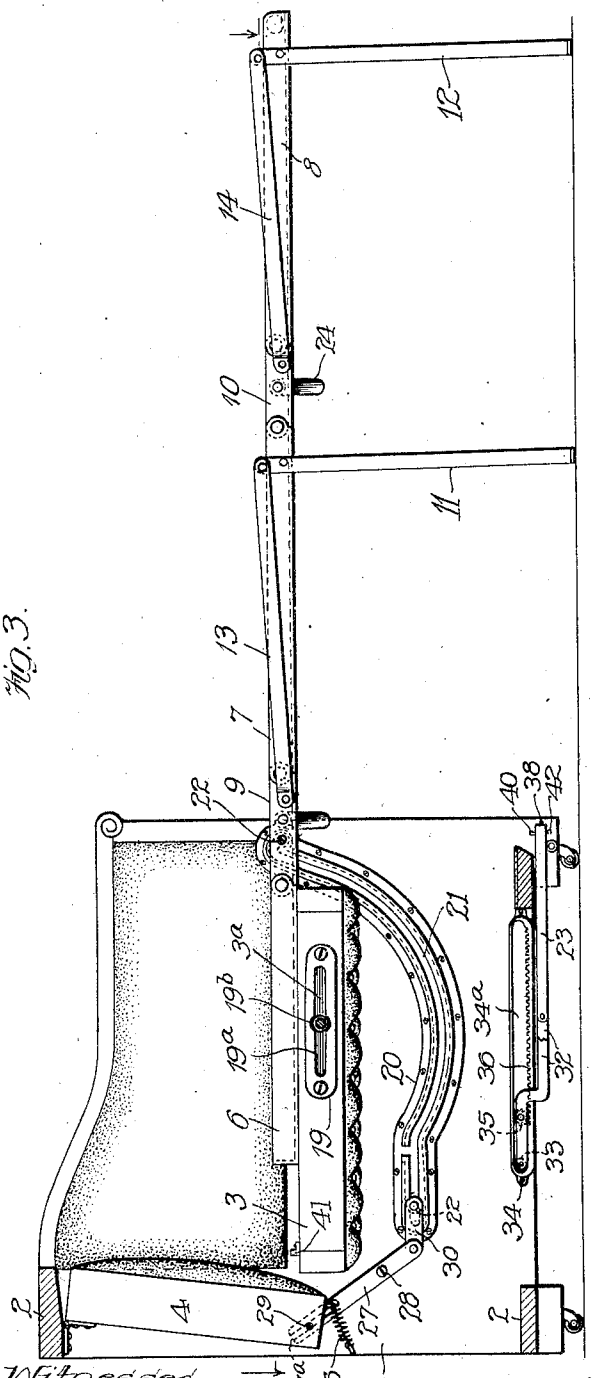
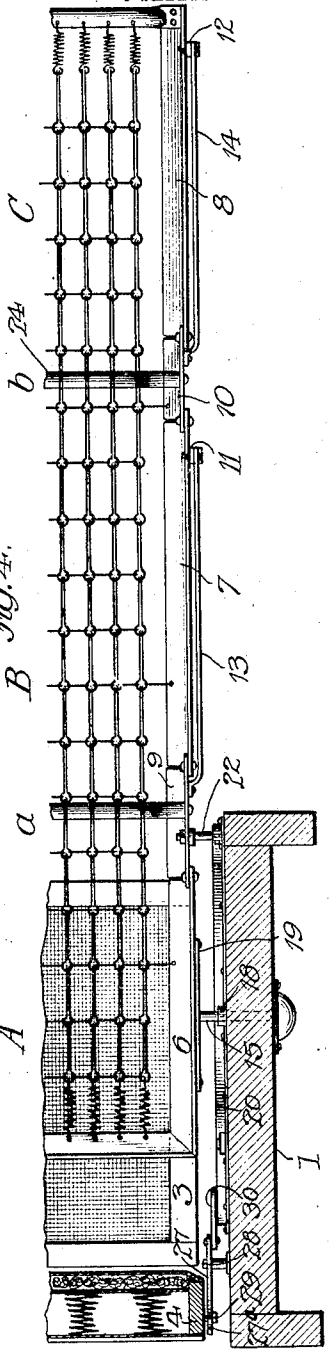


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 6.

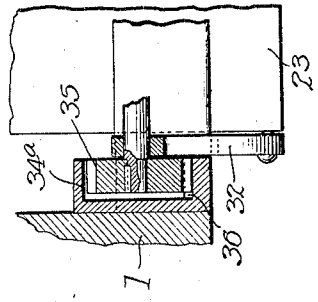


Fig. 5.

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UNITED STATES PATENT OFFICE.

SAMUEL GOLDSTEIN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-FOURTH TO ISADORE GOLDSTEIN, ONE-FOURTH TO ABE GOLDSTEIN, AND ONE-FOURTH TO MEYER GOLDSTEIN, ALL OF CHICAGO, ILLINOIS.

BED DAVENPORT OR COUCH.

1,078,044. Specification of Letters Patent. Patented Nov. 11, 1913.

Application filed February 17, 1913. Serial No. 748,982.

To all whom it may concern:

Be it known that I, SAMUEL GOLDSTEIN, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Bed Davenports or Couches, of which the following is a specification.

My invention relates to bed davenports or couches and the object thereof is to provide furniture of this character with simple, efficient, and easily operated mechanism for converting such furniture into a bed.

The various features and the utility of my construction will be apparent from the description hereinafter given.

In the drawings Figure 1 is a vertical sectional elevation of a davenport embodying my invention, the section being taken on the line 1—1 of Fig. 2; Fig. 2, a front elevation of a portion of such davenport with a part thereof cut away; Fig. 3, a vertical sectional elevation of the davenport with the bed spring sections shown extended; Fig. 4, a plan view of a portion of the parts illustrated in Fig. 3; Fig. 5, a sectional elevation similar to Fig. 3, but showing the bed spring sections and the seat in process of folding or unfolding; and Fig. 6, a detailed section on the line 6—6 of Fig. 5, but on a larger scale.

It will be understood that my invention is applicable to different kinds of furniture such as davenports, bed couches, and the like, but in the present instance I have shown the same embodied in a davenport for the purpose of giving a clear and definite description of my invention and without any intention of limiting myself thereto.

Referring to the embodiment of my invention as herein shown, the davenport comprises the two end pieces 1, connected together by the cross pieces 2; the seat 3; and the back 4. This back is by preference hinged at 5 to the under side of the upper cross rail 2 whereby such back may be swung in the manner hereinafter explained.

The bed spring which is arranged to be folded, comprises three main sections indicated generally by the reference letters A, B, and C, and two short sections indicated by the letters *a* and *b*, the section *a* being between the main sections A and B and the section *b* being between the main sections B and C, all as more clearly indicated in Fig. 4. This bed spring may be of any suitable construction, in so far as the fabric thereof is concerned, but its side rails are made in sections corresponding to the sections named, for folding purposes. To this end the main sections A, B and C have such rails 6, 7, and 8 respectively and the small sections *a* and *b* have such rails 9 and 10 respectively. The side rails 6 are secured in suitable manner to the under side of the seat 3 and are pivotally connected at one end to the rails 9. These rails 9 are in turn pivotally connected to the rails 7 which in turn are pivotally connected to the short rails 10. These latter rails are in turn pivotally connected to the rails 8 of the last section C. The two sections B and C are provided with legs 11 and 12 respectively which are pivotally connected to their respective side rails. In order to provide for the automatic folding and unfolding of these legs during the manipulation of the bed, links 13 and 14 are pivoted one end to the upper ends of these legs and pivoted at their other ends to the rails 9 and 10 respectively.

The seat 3 is mounted to rotate and to slide in the manner hereinafter explained upon stationary horizontal pins 15 which extend through bushings 16 in the end frames 1 and are secured therein by means of the end nut 17 and collar 18 on opposite sides of said frames. The pins 15 extend through and work in horizontal slots 19^a of plates 19 secured to the opposite ends of the seat and the heads 15^a of such pins are arranged to travel in the slots 3^a in the ends of the seat, Figs. 1 and 2. To facilitate assembling and disassembling of the parts, I prefer to provide slots 19^a with a central enlargement 19^b, of a size sufficient to permit the heads 15^a to pass through.

Upon the inner side of each end frame 1 there is secured a plate 20 having the peculiar form and curvature illustrated in Figs. 1, 3, and 5. This plate has a slot 21 which is substantially horizontal at its rearward portion and curved downwardly and then upwardly to its forward end. This slot constitutes a track for a pin 22, one of which is secured to each of the side rails 9 and projects laterally therefrom. Each

of these pins passes through the slot 21 and has a head 22ª received within the plate 20 for retaining the pin within the track.

Inasmuch as the seat 3 is capable of both a pivotal and sliding movement and is pivoted to the bars 9, it follows that the movement of the pins 22 in their tracks will cause a pivoted and sliding movement of the seat, as now to be explained. The normal position of the parts is indicated in Fig. 1, at which time the seat 3 is in horizontal upright position and the bed sections are folded upon each other in the space below the seat, the rails 6, 7, and 8 being in a substantially horizontal plane and the rails 9 and 10 being in a substantially vertical position, the mattress being folded between such sections, as indicated in dotted lines in said figure. When it is desired to convert the davenport into a bed the front panel 23, whose particular or preferred construction and manipulation will be hereinafter explained, is let down and moved to a position underneath the davenport, as shown in Fig. 5. The operator then takes hold of the pivoted cross brace 24 which serves as a handle and pulls the bed spring sections forwardly. As a result the pins 22 which are normally toward the rear end of their tracks will move forwardly therein, first in a horizontal direction and then downwardly, thence upwardly, and finally downwardly to the extreme socketed ends 21ª of the tracks. Just as soon as the pins 22 start downwardly in their tracks, the seat 3 will begin to rotate and as these pins continue in their tracks the seat will be turned upside down and finally, when the pins reach the extreme ends 21ª, of their tracks, the seat will have reached its reverse position indicated in Fig. 3 and the parts will moreover be held or locked in this position. The position of the parts just before the pins 22 reach their final position is shown in Fig. 5 and after the final movement of these pins main sections B and C and the small section *b* are unfolded to the position indicated in Fig. 3 in which manipulation the links 13 and 14 automatically cause the legs 11 and 12 to assume a vertical position. At this time the entire bed spring is in a horizontal position together with the mattress which had been folded therewith. When it is desired to fold up the bed the reverse operation takes place, that is to say, the section C is first folded over, the two sections B and C and the small section *b* are then lifted by means of the cross brace 24. During the folding of the first section C the legs 12 automatically fold into a position of alinement with the rails 8, but at this time the legs 11 are still in their extended position but are folded when the section B is folded with respect to the section A. The operator thereupon lifts upwardly so as to move the pins 22 out of the socketed ends 21ª to permit such pins to travel rearwardly in their tracks. The seat 3 now begins to rotate back to its normal position and to be slid rearwardly as soon as the pins 22 reach the horizontal portions of their tracks. The parts again assume their normal position shown in Fig. 1.

In case the piece of furniture is of the davenport type, it is preferred to provide a back 4 with automatic means controlled by the movements of the seat and associated parts for moving or swinging the same as to its lower end. For this purpose I secure to the lower end of the back 4 one end of a coiled spring or springs 26, whose other end is secured to the end frame 1. By this means the back 4 is normally swung rearwardly to the position shown in Fig. 5 which represents the bed position. At the opposite ends of the back are two levers, 27 pivoted at 28 to the inner sides of the frame 1 and having a pin and slot connection with such back, the levers being provided with the slots 27ª and the back, with pins 29. The lower ends of these levers 27 are pivotally connected to horizontal links 30 having headed pins 31 similar to the pins 22 and always arranged to travel in the tracks, but only in the horizontal portion thereof. The construction and arrangement of the parts are such that when the pins 22 are at their normal, that is, their innermost position, they contact the pins 31 and force the latter rearwardly to the extreme rear ends of the tracks, with the result that the levers 27 are rocked forwardly as to their upper ends to swing the back 4 forwardly against the tension of the spring or springs 26. Thus the parts when in normal position keep the back in proper normal position but when the restraint of the pins 22 is removed in the unfolding of these parts, the spring 26 will exert its influence, thereby swinging the back 4 rearwardly to the position shown in Fig. 5, at which time the pins 31 will move forwardly in their tracks.

As hereinbefore stated, the door or panel 23 at the front of the davenport below the seat is preferably constructed as herein shown. This panel, which may be of any suitable material and form, is pivotally connected at its lower end and at opposite corners to the links 32, terminating in small rollers 33 movable in the slot 34ª of the horizontal plate 34 secured to the inner sides of the end frames 1. These links 32 are provided intermediate their length with small pinions 35, which are adapted to travel in said slots and to mesh with a horizontal rack 36 formed on the bottom of said tracks or slots, as clearly indicated in Figs. 1, 5, and 6. These links 32 and the panel itself are adapted to roll upon anti-friction rollers 37 projecting from the end frames 1. By preference I provide the upper corners of

the panel with locking means, the same comprising spring-pressed plungers 38 working forwardly in openings in the upper edge of the panel and adapted to enter the sockets 39 in the forward edge of the seat 3. In addition, I prefer to provide horizontal pins 40 working through the panel and entering socketed brackets 41 on the under side of seat 3. When it is desired to remove the panel to open the space below the seat, the plungers 38 are withdrawn by depressing the handle pieces or knobs 42 and then swinging the panel outwardly and then downwardly, after which the panel is moved rearwardly, the links 32 and associated parts maintaining the panel in proper position during sliding, so that no binding can take place. The panel now assumes the position indicated in Fig. 3.

The construction hereinbefore described is comparatively simple and inexpensive of manufacture and is moreover very easy of operation. Moreover, the mode of operation is readily understood by anybody, which is an important consideration in furniture of this character. The operations both of folding and unfolding the sections are extremely simple, all that is necessary, after the panel is removed, being to pull the parts outwardly by the handle 24 and then to unfold the last section C and place it upon the floor. The reverse operation is just as simple, the seat 3 moving automatically both in the folding and unfolding operations.

It will be understood that my structure may be made of any suitable material or materials found expedient or desirable and while I have herein shown the end frames and seat frame for instance, as made of wood, the same may be made of metal, in which case the slotted plates thereof could be made integral. Moreover, while I have herein shown three main sections of bed spring, it will be understood that the outermost section C and small section *b* may be dispensed with, in which case the length of the bed would correspond in direction with the length of the davenport or couch, whereas when the full number of sections shown is used, the length of the bed is transverse of the length of the davenport or couch.

I claim:

1. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, and a bed spring made in folding sections, one of which is secured to the seat and another of which has portions coöperating with the tracks and movable therein.

2. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, and a bed spring made in folding sections, one of which is secured to the seat and another of which has portions coöperating with the tracks and movable therein, one end of the tracks having sockets to retain said portions.

3. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, and also to slide horizontally therein, and a bed spring made in folding sections, one of which is secured to the seat and another of which has portions coöperating with the tracks.

4. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a bed spring made in folding sections, one of which is secured to the seat and pins on another of such sections and adapted to cooperate with the tracks.

5. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, stationary pins projecting inwardly from the end frames, the opposite ends of the seat having slots to receive the pins, and a bed spring made in folding sections, one of which is secured to the seat and another of which has portions coöperating with the tracks.

6. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, stationary pins projecting inwardly from the end frames, plates secured to opposite ends of the seat and having slots to receive the pins, and a bed spring made in folding sections, one of which is secured to the seat and another of which has portions coöperating with the tracks.

7. In furniture of the class described, the combination of end plates having slots, one portion of each of which is horizontal and the remainder curved, a seat mounted to rotate in the frame, and a bed spring made in folding sections, one of which is secured to the seat and another of which has portions movable in said slots, whereby the seat is reversed in the act of drawing said sections outwardly.

8. In furniture of the class described, the combination of end frames having slots, one portion of each of which is curved and terminates in a socket, a seat mounted to rotate in the frame, and a bed spring made in folding sections, one of which is secured to the seat and another of which has portions movable in said slots, and adapted to be received and retained in said sockets.

9. In furniture of the class described, the combination of end frames having stationary

curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, and a bed spring made in folding sections including pairs of opposite side rails which are pivoted to each other, the innermost pair of rails being secured to the seat, and the next adjacent pair of rails having projecting pins movable in the slots.

10. In furniture of the class described, the combination of end frames having stationary curved tracks on their inner sides, a seat mounted to rotate in the frames, and a bed spring made in folding sections comprising three main sections and two short sections, each having a pair of opposite side rails, the rails of the innermost under section being secured to the seat and each of the short sections pivotally connected through the medium of their rails, two adjacent main sections, the rails of the short section connected with the said innermost main section being provided with projecting pins movable in said tracks.

11. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a back swinging from its upper end, a bed spring made in folding sections, one of which is secured to the seat and another of which has members coöperating with the tracks and movable therein, and operating connections for said back under the control of said bed spring in its movements.

12. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a rotary seat mounted in the frames, a back swinging from its upper end, a bed spring made in folding sections, one of which is secured to the seat, and another of which has members coöperating with the tracks and movable therein, and operating connections for said back which are contacted by said members in one extreme travel thereof in said tracks.

13. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a back swinging from its upper end, a bed spring made in folding sections, one of which is secured to the seat, and another of which has members coöperating with the tracks and movable therein, operating connections for said back including pins traveling in said tracks and arranged to be moved by said members in their extreme movement in one direction.

14. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a back swinging from its upper end, a bed spring made in folding sections, one of which is secured to the seat and another of which has members coöperating with the tracks and movable therein, operating connections for said back under the control of said bed spring in its movements, and a spring tending to hold the back in one position and acting against said operating connections.

15. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a back swinging from its upper end, a bed spring made in folding sections, one of which is secured to the seat and another of which has members coöperating with the tracks and movable therein, operating connections for said back including levers having at one end pin and slot connection with the back, links pivoted to the other end of the levers, and pins on said links adapted to travel in said tracks and to be moved by said members in the extreme movement of the latter in one direction.

16. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a bed spring made in folding sections, one of which is secured to the seat and another of which has members coöperating with the tracks and movable therein, and a hinged front panel between the end frames.

17. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a bed spring made in folding sections, one of which is secured to the seat, and another of which has members coöperating with the tracks and movable therein, and front panel which is hinged and also arranged to slide between the end frames.

18. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a bed spring made in folding sections, one of which is secured to the seat and another of which has members coöperating with the tracks and movable therein, a hinged front panel between the end frames, and means for locking the panel to the front of the seat.

19. In furniture of the class described, the combination of end frames, having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a bed spring made in folding sections, one of which is secured to the seat and another of which has members coöperating with the tracks and movable therein, a hinged front panel between the end frames, and spring-pressed plungers located in the panel and adapted to engage the front of the seat.

20. In furniture of the class described, the combination of end frames having stationary

curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a bed spring made in folding sections, one of which is secured to the seat and another of which has members coöperating with the tracks and movable therein, a hinged front panel between the end frames, and a pair of links 32, on which the panel is pivoted and which is arranged to slide in a horizontal plane at the lower side of the end frames.

21. In furniture of the class described, the combination of end frames having stationary curved tracks on the inner sides thereof, a seat mounted to rotate in the frames, a bed spring made in folding sections, one of which is secured to the seat and another of which has members coöperating with the tracks and movable therein, a hinged front panel between the end frames, a pair of links on which the panel is pivoted, and which is arranged to slide in a horizontal plane at the lower side of the end frames, racks secured to the end frames, and connected pinions journaled in said links and meshing with the racks.

22. In furniture of the class described, the combination of end frames having stationary curved tracks on their inner sides, a seat mounted to rotate in the frames, and a bed spring structure made in folding sections, one of which is connected with the seat, said structure having portions coöperating with the tracks and movable therein.

23. In furniture of the class described, the combination of end frames having stationary curved tracks on their inner sides, a seat mounted to rotate in the frames, and a bed spring structure made in folding sections, the innermost one of which is secured to the underside of the seat, said structure having portions coöperating with the tracks and movable therein.

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